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ABSTRACT

This publication is the final report of the federally-funded population education project of Zero Population Growth (ZPG). In this report, population education is defined and discussed, the development and performance of the project is described, evaluation measures are presented and analyzed, and the continuation of the project after the federal grants expired is mentioned. This project involved conducting population education workshops during 1975 and 1976 in five states: Delaware, Florida, Ohio, New Jersey, and Maryland. The goal was the incorporation of population studies into school systems in these states. Participants were science and social studies teachers, administrators, and professors of education. Data were collected from participants to determine to what extent they reacted to the workshops and incorporated population education into their schools. A telephone survey was conducted to validate the initial questionnaires. Data support the hypothesis that the participants would use their professional roles to institutionalize and expand population education. Data from the questionnaires were used to improve ZPG teachers' materials. Some samples of these materials, along with the workshop agenda, the questionnaire, and the telephone survey are included in the appendices. (MR)

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The ZPG Population Education Program

Description & Evaluation

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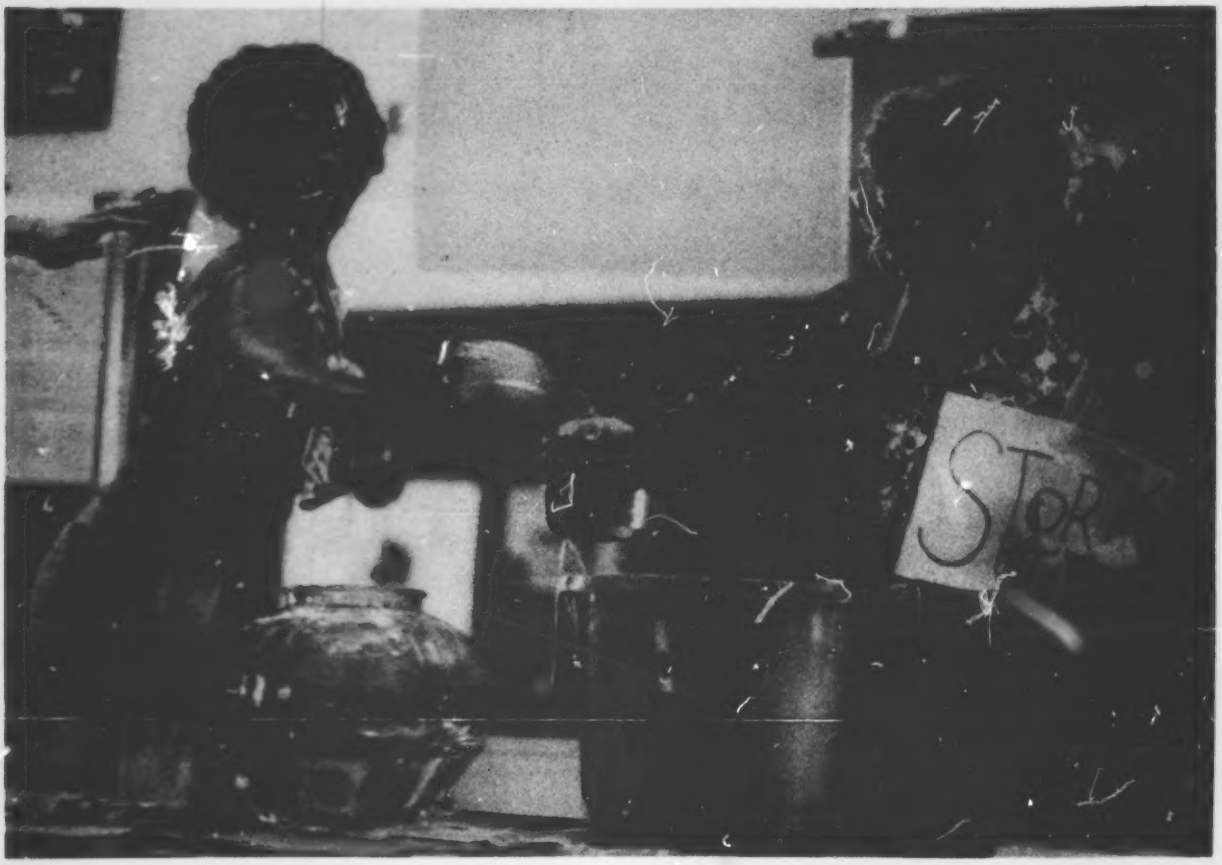

Demography need not be dry! Teachers at a ZPG Pop Ed workshop practice a classroom demonstration of birth and death rates, natural increase and global carrying capacity.

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The Zero Population Growth Population Education Program

A Formal Evaluation of the 1975-1976 Project and Current Progress

by

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Project Director

and

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January, 1976

Abstract

The Zero Population Growth Population Education Project funded by the U.S. Office of Environmental Education grant #G00-7500692, was begun in July of 1975; its ultimate goal was the incorporation of population studies in school systems in five selected states. To help achieve this goal, population education workshops were held for science and social studies teachers and administrators and professors of education in each state. These workshops were cosponsored by various education entities such as state departments of education, local school districts, environmental groups and universities within the state. Local affiliates of Zero Population Growth, Audubon Society, Planned Parenthood and other groups were included in the training process in order that they might serve as population education resources to their local schools. After the workshops, the local efforts of participants included "spinoff" workshops, in-service courses, curriculum revision, and purchases of materials and audiovisual aids in support of teaching about population; more than two-thirds of the teachers utilized population lesson plans directly in their classrooms after the workshops. The apparent success of this project has attracted additional funding from foundations and individual contributions, enabling Zero Population Growth to expand its workshops to more states and educational meetings.

A second grant from the U.S. Office of Environmental Education permitted systematic data gathering and evaluation of the 1975-1976 project, which is detailed in this final report. This report also defines population education and describes the initiation, planning and format of the workshops in each state, data on educators' population needs based on questionnaires filled out by workshop participants, and an assessment of the ZPG project as a model for teacher training. The current progress of the project, after expiration of USOEE funds, is also described.

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Front and Back Covers: Scenes From Pop Ed Workshops

Acknowledgments

A camel, the saying goes, is a horse put together by a committee. However, not all committee work or group projects end up so strangely shaped. The ZPG Pop Ed Project is a case in point. The success of the project has been due to the contributions of many people. It is impossible to list them all because our appreciation includes hundreds of our workshop participants in the 1975-1976 school year alone.

We take this opportunity to thank everyone and to express gratitude to the following people for their special helpfulness during the first year of the project: Judi Schultz and Carl Huether of the University of Cincinnati; Stephen Viederman of United Nations Fund for Population Activities (formerly of the Population Council); Larry Schaefer of Environment/Population Services, Hamden, Connecticut; Jeannette Atkinson of Boston ZPG; Judi Seltzer, Carol Fletcher and Robert Avedon of the Population Reference Bureau; Leon Bouvier (formerly of the Population Reference Bureau) of the U.S. Census Bureau; John Disinger and Herb Coon of ERIC/SMEAC; Joe Dasbach of the American Association for the Advancement of Science; Townsend Scudder of the Center for Information on America; Bruce Stokes of Worldwatch Institute; Cally Cochran and Lester McCrea of the Urban Life/Population Education Institute of Baltimore; Carol Fontein and David Baker of the Population Institute; Anne Wilson and Ed Turanchik, Population Institute interns; Ruth Galaid, Population Education Advisor, Office of Population Affairs, HEW.

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Elaine Murphy
January, 1978

Chapter I: What is Population Education?

A. Demographic Background

For over 99 percent of the three million year history of the species, homo sapiens lived as a hunter-gatherer in harmony with the natural system which supported his life and the lives of all living things. During these epochs the human population grew at an extremely slow rate, subject to the constraints of the environment.[1] The beginnings of agriculture at about 8,000 B.C. marked the first major modification of the natural ecosystem; it encouraged an increase in population as well as an increase in cooperation, an interactive combination that anthropologists believe laid the foundations for large-group settlements and the subsequent social arrangements required to govern them.[2]

Around 1800 A.D., the technologic and hygienic changes known as the Industrial Revolution multiplied manyfold the ability of the earth to support human life. The mortality rate plunged and population reached 1 billion in 1830, 2 billion in 1930, 3 billion in 1960 and 4 billion in 1976. At current rates, another billion will be added in about 11 years and the entire population will double in approximately 38 years.[3]

What are the consequences of such rapid population growth when combined with technologic change and increasing urbanization? How do these interrelated changes affect our ecosystem--the symbiosis of forests, grasslands, plants, soil, water, air, and wildlife? What is the impact of such growth on human social arrangements--on governance, on economic distribution, on ethical systems, on social services, on the family? Similarly, what might be the result of a non-growing or declining population on physical, economic, and social well-being? What are the relationships between population change, modern technology and urbanization, on one hand, and individual mental health, serenity and autonomy? What are the personal and societal decisions which alter these relationships?

These questions, in part, form the basis of population education: an inquiry into the interaction between human beings--their numbers, their distribution, their life styles--and the natural and social environment which they inhabit.

One of the most popular definitions of population education comes from Population and the American Future (1972), the report of the President's Commission on Population Growth and the American Future: "the process by which the student investigates and explores the nature and meaning of population processes,

population characteristics, and the causes of population changes in addition to the consequences of these processes, characteristics, and changes for himself, his family, his society and the world."[4]

B. Population Education as Environmental Education

Population education is, in many ways, synonymous with the term "environmental education" as derived from the Environmental Education Act: "the education process dealing with man's relationship with his natural and manmade surroundings, (which) includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, economic impact, and urban and rural planning to the total human environment." Population studies emphasize the interaction of human numbers, distribution, migration and age structures with the other components of the social, natural and physical environment.

Population education is not demography. Just as a study of energy or food would be inadequate without the inclusion of population factors, population education would be inadequate if it dealt merely with birth, death, fertility and growth rates, age structure, or migration patterns. Such population factors do not exist in isolation, but within mutually reinforcing social, physical, cultural and political systems. The relationship of population growth to food, for example, is not a simple dynamic; it must include energy supply, the impact of pesticides and fertilizer on the ecosystem, differences in consumption patterns and protein use among nations, worldwide economic and political systems, and ethical considerations, among other factors. Similarly, while disparities in family size in various parts of the world can be examined in terms of impact on national development, to understand the differences and to examine the desirability or feasibility of altering patterns, one must understand the interplay of resource base with the cultural, economic and religious systems which have hitherto reinforced the family size pattern.[5]

Clearly, then, the content of population education is multidisciplinary. It exemplifies what is commonly called the First Law of Ecology: "Everything is connected to everything else." Because our junior and senior high schools are organized into separate disciplines, population education can be infused into various social studies, science, home economics, mathematics, humanities and other courses. Regardless of the discipline, the interrelationship with other disciplines must be included. The materials to accomplish this integration exist (Appendix A) as do the appropriate inquiry skills.

Another common saying among environmentalists underscores

the kind of inquiry skills population education requires: "There is no such thing as a free lunch." Students will not only learn about environmental interrelationships, but will inquire into the implications of human activities--including population dynamics--and their short and long range effect on natural and societal resources and on public policy. Population education is issue-oriented; it presents for its participants the opportunity to explore alternative future scenarios which can result from decision-making on the personal, societal and international levels. It will provide the kind of knowledge necessary for enlightened decision-making, considering risks, benefits, and trade-offs of our present courses of action, and proposing strategies which will achieve a dynamic and health relationship with the total environment.

C. Population Education in the United States

In 1962, demographer Philip Hauser observed that while population growth and its attendant problems impinge upon the lines and futures of American children, the topic was rarely mentioned in the schools.[6] Since that time a great deal has been done to remedy the situation. A brief account of the population education activities of universities, private organizations, the federal government and education associations, as well as state and local school systems, is continued in Appendix B, "Bringing the Real World into the Classroom: The Call for Population Education."

A recent survey[7] of a national random sample of high school teachers of science and social studies revealed that 35-40% of these teachers include population topics in their courses. The population units are brief: the majority are under 10 hours in length, and a third of the units take less than five hours of class time. Most of the population units emphasize the relation of population to the environment, food supply and natural resources. The researchers also found that cost and availability of population materials, lack of population education background, lack of time, and difficulty deciding how population education "fits" their curriculum were problems that most teachers encountered. Because most of these problems might be solved by teacher training (those trained were twice as likely to teach about population as those not trained), the researchers recommended an increase in population education teacher training.

In many ways, it is encouraging to know that an estimated 35-40% of high school science and social studies teachers do include population education, a field just over a decade old. On the other hand, for a concern that many experts have called the most pressing problem facing mankind[8,9,10] the extent of

population coverage and the amount of time devoted where coverage exists seems inadequate. Recently, representatives from federal agencies met to discuss what the federal government could do to promote population education. Its report, Population Education and the Federal Role described the state of the art as follows:

> ....it is fair to offer the following perspective:
> 1) In view of the limited support extended to population education, considerable progress has been made;
> 2) Measured against the current state of population knowledge in this country and the need to assist Americans to become better informed on population issues, there is much to be done.[11]

It was in this climate for population education--great advances, but a long way to go--that the Zero Population Growth, Inc. (ZPG) Population Education Project began.

Chapter II: Why the ZPG Pop Ed Project?

A. Its Beginning

ZPG began its population education workshop project (referred to hereafter as the "pop ed project") in July of 1975, a time when it could build upon the experiences of earlier population education projects and could utilize the excellent population teaching materials available.

A decade earlier, the Urban Life Population Education Institute (ULPEI) of Baltimore had begun "from scratch" as a pioneer effort to introduce population topics into the schools. After 10 years of teacher training, materials development, and $250,000 worth of grants, ULPEI achieved its goal; in 1975, population education became an official part of the Baltimore City Public Schools Social Studies curriculum.[12] In the early 1970's, population education was also given a boost by the Superintendent of Public Instruction of Washington (state) when he commissioned the development of Teaching Population Concepts, Population Task Cards, and Eco: An Island Simulation Game; teacher training workshops (in cooperation with local ZPG chapters) accompanied the distribution of these materials. Other population education projects indicated the interest of teachers in receiving training and acquiring sound teaching materials. Excellent population teaching materials have been produced for almost 50 years by the Population Reference Bureau in Washington, D.C., and more recently by universities, environmental and other organizations, state and local school systems, the U.S. Census Bureau, the United Nations and commercial publishers. It appeared that the time was right to develop a project to put many more interested educators in touch with these materials to provide them with the background and training that encourage the use--not merely acquisition--of the materials.

Thus the ZPG Pop Ed Project came into being as a special program of Zero Population Growth, Inc. ZPG is a non-profit citizens' organization founded in the late 1960's as part of the burgeoning environmental movement. Through chapters in 50 states, ZPG volunteers already had, among other activities, provided population education support to their local schools--distributing materials, loaning films, serving as classroom speakers, and in several instances organizing workshops for teachers. The present project, however, has been designed and administered by paid professional staff working out of ZPG's national headquarters in Washington, D.C.; its existence is owed to the $27,216 grant it received from the U.S. Office of Environmental Education (USOEE) to conduct teacher training workshops in population education during the 1975-1976 school year. The grant was supplemented by

$15,000 from the Sunnen Foundation, which permitted the hiring of a second full-time professional staff member.

B. Its Objectives

The long-range goal of the ZPG Pop Ed Project was to increase the opportunities for students to explore the causes and consequences of population changes and to understand the relationship of population changes to the natural, social, and economic environment. The main objective of the 1975-1976 project was not only to provide population teaching tools to individual teachers but to contribute to the "institutionalization" of population education in school systems in 15 states.

Institutionalization implies the promoting of population education through the structures and channels which school systems utilize for incorporation of new topics or methods--in-service courses or workshops, curriculum planning or writing teams, promulgation of new materials by subject matter supervisors or department heads, communication of new ideas through teachers' newsletters or meetings and similar approaches. The ZPG project planned to organize workshops for those school personnel most likely to utilize these methods of institutionalization. Classroom teachers were still an important part of the proposed audience but it was hoped that these teachers would be identified by supervisors as teachers with leadership qualities. Department heads, professors of education, curriculum writers, and supervisors of science, social studies, and other relevant disciplines were identified as those most likely to share their population education training with others.

C. The Development of the Project

The question was where--and how--to start; it was clear that a workshop program must utilize sound materials and must include an informative, enjoyable and useful workshop format. It was also imperative to develop a "systems approach" so that 1) the appropriate audience and setting for the workshops could be identified; 2) the workshops would be accepted by the desired audience; 3) the workshops and follow-up activities could be designed specifically for the needs and interests of the participants; and 4) the organization of the workshops would be as efficient and inexpensive as possible.

It soon became apparent that to achieve the desired multiplier effect, the amount of time spent on identification of and negotiations with potential cosponsors and the development of a systems approach for each state was as crucial as planning the workshop activities and materials. Consequently the number of state workshops was reduced to five, plus sessions at pro-

fessional meetings. With limited funds, it became imperative to identify five states within reasonable travel distance having characteristics favorable to the institutionalization of population education. Eventually, Delaware, Florida, Ohio, New Jersey and Maryland were chosen.

Identification of Workshop Sites

Among the characteristics desired was a demonstrated interest in either population education or environmental education that could be augmented by the ZPG project. The assumption underlying this requirement was that the fulfillment of a need for a population education workshop was a better starting place than attempts to persuade school officials that population education was important and that they "ought" to provide teacher-training in it. Two large-scale reviews of curriculum change projects, the Far West Laboratory study, Factors Influencing School Change[13] and the Rand study, Federal Programs Supporting Education Change[14], have stressed the importance of "locally felt need" as being a greater impetus to change than opportunism, i.e., the chance to obtain grant money. Also, the prior existence of an environmental or population education interest usually guaranteed an in-place network of meetings, newsletters, and teacher-training opportunities essential to implementing an innovation. In addition, it meant the existence of a group of people with common interests who could continue the population education effort after the workshop was over--the "critical mass" which the Rand study found to be necessary for moral support in implementing innovations.

The Baltimore ULPEI project's emphasis on the involvement of teachers, administrators and community volunteers was remembered in the identification of candidates for the ZPG workshops, not because all three groups have to be present to adopt innovations, but because such groups could form a cooperative liason to provide local follow-up support and resources for post-workshop efforts in implementing the innvoation. (This would be especially true when no prior environmental education exists or where it is weak.) The implementation phase is more critical than the decision to adopt innovations, according to the Rand and Far West studies of the process of achieving innovation mentioned above. Thus the existence of local groups of teachers, administrators and community organizations who could cooperate on post-workshop implementation efforts was a factor in deciding where to work.

The Acceptance of the ZPG Worskhops

The associate director of the Education Resources Information Center (ERIC) for Science, Mathematics and Environmental Education did the ZPG project a great service by supplying a

a list of the 50 state department of education coordinators for environmental education and suggesting which of those states might be good candidates for population education literature and curriculum materials; suggestions from population educators and other educators were also considered.

These referrals by population educators and ERIC leaders were probably very important in gaining acceptability for the ZPG project. Although population education was no longer considered controversial in most places, there may have been some school administrators who had doubts about the ability of ZPG, a lobbying organization, to conduct purely educational, non-propagandistic workshops. The science education editor at the American Association for the Advancement of Science (AAAS), for example, alerted us to the New Jersey Council for Environmental Education (NJCEE) as a likely cosponsor in that state. By gaining permission to use the name of the AAAS editor as a recommendation, the ZPG director was able to gain the trust of the director of the NJCEE, a former colleague of the AAAS editor. The kind of contact and referral was important in negotiating the workshops in each state; the funding by the Office of Environmental Education, familiar source of support for worthwhile projects, played a similar role in fostering respectability for the ZPG workshops. Moreover, the ZPG project staff decided to offer a wide variety of materials such as those developed in cooperation with the National Council for the Social Studies, the National Science Teachers Association, and a list of resources published by the National Catholic Education Association. The use of these materials offering differing viewpoints and focuses helped potential cosponsors to understand that ZPG was not trying to purvey a "party line."

The Design of the Workshops

The identification and use of sound population teaching materials and the design of an informative, enjoyable and useful workshop format were part of the planning for all the workshops. In addition, the workshop had to vary from state to state to emphasize local population education resources.

To identify workshop materials and activities, materials from the Population Reference Bureau, environmental organizations, universities, National Science Foundation institutes, the federal government and other sources were reviewed. Selection of materials for use was made on the following criteria: accuracy, fairness (many viewpoints), attractiveness to teachers and students (engaging their interests and skills and appropriate to their developmental levels), the variety of teaching/learning methods employed, and their adaptability for immediate use. These materials were then used to design the workshop format to fulfill four functions. The workshop intended to give its participants: 1) basic information about and understanding of population trends; 2) direct experiences with population education lesson plans, games, and activities,

including a brief team curriculum-writing session; 3) knowledge of and access to the many written and audiovisual materials available for population education; 4) a packet of population education materials directly usable in the classroom (the ZPG Population Education Resources Kit).

The ZPG Population Education Resources Kit, distributed to all participants, was designed and some materials were specially developed to form the basis of workshop activities. The "lecture," for example, was based on a written population quiz in the kit and the answers to it. All the lesson plans and activities used at the workshops were provided in the kit. Materials and films used and demonstrated were listed, along with purchase information, in the resources section of the kit. Even the outline for the film discussions (which were always lively) was included. The kit served to reinforce the memory of what was experienced at the workshop and yet, at the same time, provide directly usable materials relevant even to people who had not attended the workshop. In the back of this design was the idea that after working experientially with the materials in the kit, the participants would feel confident about using them, and some participants could use the kit to train others. The participants were encouraged to make additions, deletions or adaptations according to the needs of their particular school programs. They were also invited to reproduce any of the lesson plans, without permission, for classroom use.

Later, a workshop leader's guide, which gave detailed instructions on how to run a population education workshop, was developed using the ZPG workshop format and teacher's kit. The guide emphasized the ZPG approach of participant involvement and also suggested that the four functions of the workshop could be fulfilled in a variety of methods--quizzes, discussion, debate, role-playing, curriculum-writing exercises, group games, use and analysis of audiovisual aids, demonstrations, and brief lectures. The leader's guide also stressed the importance of incorporating talented local teachers and local resource groups, as well as inviting a mix of roles--supervisors, department heads, classroom teachers, professors of education, state education department coordinators.

In addition to designing all the workshops to emphasize participants' involvement with sound and interesting materials and activities, the workshop in each state had to be designed to include local population education resources. It was important to cosponsor the workshops with a local and/or state education agency, a university, and often with environmental or population organizations as well. The hope was that participants would see the workshops as their own, not as that of an outside group. The Florida workshop, for example, was cosponsored by the Florida State Department of Education, Florida State University, and the Population Reference Bureau. Another aspect was the emphasis on local resources for population educa-

tion. This meant including presentations by local teachers, professors and staff members (or volunteers) from local organizations, utilizing their materials and films and describing the services they could provide to workshop participants. These written and audiovisual materials and services were described in handouts distributed to participants. Moreover, a brief true or false quiz on the state's and regions' demographic patterns was part of the workshop; the answers to the quizzes (which were "rigged" to be all true) were discussed so that local patterns of population change could be composed to national and global trends. Census Bureau materials which feature local population patterns were demonstrated; the access information to these materials was given on the reverse side of the local population quiz.

Efficiency and "Cost-Effectiveness"

Because of the low budget of the project (Appendix C) and even more limited number of project staff members (two), it was essential that the project utilize the existing networks of the cosponsors of the workshop. For example, in Maryland the Coordinator of Environmental Education of the Maryland State Department of Education personally invited the science, social studies and humanities supervisors of all 24 school districts in Maryland to attend the ZPG population and environmental education workshop. Over one-hundred attended the workshop. This not only signalled the approval of the State Department of Education and encouraged the attendance of many more participants than might have occurred otherwise, but also saved ZPG a considerable amount of organizational time and expense. In many cases the cosponsor could not contribute money, but did provide many time consuming services such as the design and mailing of workshop invitations and the arrangements for a meeting room, meals, and audiovisual equipment.

Similarly, it was essential not "to re-invent the wheel" in terms of materials development. It became apparent that several curriculum development projects in environmental education had produced similar materials. Scores of population curriculum materials were reviewed by the ZPG project staff in order to identify and use the best of them and to avoid duplication of existing materials. Only where a significant gap existed did the ZPG pop ed project develop its own workshop materials. This saved time and money. The generous donations of materials from such organizations as the Population Reference Bureau, the Center for Information on America and the American Association for the Advancement of Science, plus reduced prices from Worldwatch Institute and other organizations, also stretched the project dollars.

D. The Evolution of a Workshop Model

Building upon the experiences of other projects, the advice of those whom we consulted, questionnaires filled out by workshop participants, and trial-and-error, a ZPG workshop model evolved. As in all evolutionary processes, the "end product" is not static, but allows for variability and change. The model which has appeared to work well (see evaluation data in Chapter IV) consists of these features:

1. The identification of cosponsors and participants whose school system positions or other networks enable them to multiply the effectiveness of the workshop. This may be accomplished through in-service courses, newsletters, and other ways.

2. The incorporation of "local talent" and information into the workshops, such as a) population education presentations by local teachers, b) the utilization of locally-developed population education materials and films from local film libraries, c) the distribution of lists of local resources for population education, d) the inclusion of data on local or state population trends and e) the cosponsorship of the workshops with local educational agencies and other organizations. The purposes of this local emphasis were to stress the fact that the population education project was a local commitment, not merely a one-time visit from an outside group, and to provide human and material resources for population education at the local level after the workshop.

3. The selection of attractive written and audiovisual population teaching materials that come from a variety of sources and which are accurate, fair, appropriate to the needs and interests of the learner, easy to use or adapt and which utilize a large variety of teaching/learning methods.

4. The design of the workshop format around these teaching materials. Thus, participants acquire population information, understanding of population dynamics, and values clarification by actually doing the quizzes, exercises, role-playing, games, and discussions that they will use directly (or adapt) in their teaching programs. The written form of the workshop activities is provided to each participant in the ZPG Population Education Resources Kit. In this way, population education content, materials, methods, and later implementation are integrated. Access information to a wider variety of materials and resources for population education is also included in the Kit.

5. The provision of follow-up help with the implementation of participants' post-workshop plans for population education. This help consists of occasional mailings of progress reports

and data on participants' post-workshop activities in population education, as well as notices about and samples of population education materials. Help is also given in response to participants' written and telephone requests for advice in planning their "spinoff" teacher-training workshops and for obtaining free or low cost materials appropriate to their workshop audiences. All participants have been given subscriptions to Interchange, the Population Reference Bureau's population education newsletter, which contains a topical essay, classroom activities and an annotated resource list. The purpose of this continued contact was to keep alive the enthusiasm for population education engendered by the workshop and to provide additional tools to educators in their efforts to implement population education in their own programs.

Chapter III: What Happened? Population Education Workshops, 1975-1976

Delaware

A plan uniting the State Department of Public Instruction, the University of Delaware, and the principals and subject area supervisors in three school districts was initiated in September 1975.

The University of Delaware, largely through the efforts of a professor of biology, Robert Stegner, and a professor of social studies education, Val Arnsdorf, had been active since 1970 in providing environmental education services to teachers throughout the state. A course entitled "People and the Planet"--which explores the relationships between population, energy, pollution, resources, politics and other components of the environment--had been offered for five years. In addition, summer courses and workshops involved Delaware teachers in curriculum development for environmental education in collaboration with experts in the appropriate content areas. There are now over 150 specific lesson plans available. The professors' work and materials had become well-known among population and environmental education circles.

The two professors had also cooperated with the State Department of Public Instruction in contribution to and reviewing Equinox, Delaware's state plan for environmental education. The state's environmental education coordinator had worked to implement Equinox in the state's school programs. The motto for the state's environmental education plan, as well as for "People and the Planet" is:

> Man is part of a natural system, the earth, and is ultimately subject to the limits of the system.

An analysis of the progress of the implementation of environmental education in Delaware suggested that many teachers and supervisors of subject areas were receptive to the initiatives of State Department of Public Instruction and University of Delaware personnel. It appeared, however, that the endorsement and encouragement of principals of junior and senior high schools were crucial factors in the adoption of a specific school program which incorporates the environmental perspective. Although some principals were responsive, others did not consider environmental education a high priority while still others were unclear about how to include it without disrupting ongoing curricula.

Consequently, a one-day workshop for 35 principals and other administrators from a consortium of three northern Delaware school districts was planned, after a meeting of the ZPG project director, the two professors and the supervisor of science for

the Newark School District, who was then president of the consortium. One of the monthly meetings of principals was reserved for this workshop. The workshop was held November 25, 1975, at the University of Delaware. Its purpose was to encourage principals to see the importance of environmental and population education and to demonstrate methods to incorporate them into ongoing curricula. Population was used as the model environmental topic, and the workshop focused on population education curricula available. Congressman Pierre DuPont (now governor of Delaware) was invited to give the keynote address--as an attraction to the administrators whose attendance at the meeting was expected by their supervisors.

The speech by Congressman DuPont, and the remarks by university and state representatives of environmental education, served to underscore the pertinence of this topic to sound education. Remarks by superintendents and supervisors of the school districts also indicated that high-level school officers recognized the importance of population and environmental issues. Demonstrations of classroom activities in population education by teachers who are currently using them emphasized the feasibility of implementation. These teachers pointed out that these activities enhanced their subject areas and brought a topic of unparalleled relevance into the educational experience of their students. The population education advisor of the Department of Health, Education, and Welfare's Office of Population Affairs offered her encouragement and the associate dean of the College of Education indicated the need of education to be both relevant and open to community concerns. The workshop agenda is given in Appendix E.

In spite of this encouragement, some of the principals were openly negative about "having the schools solve every problem in the world." Many of them were experiencing difficulties with racial integration of their schools, which they mentioned as an example of their burdens. One principal commented that schools were being asked to fulfill the functions of the home, church, the state and psychiatry. A non-defensive acknowledgement of the principals' problems by workshop leaders served to defuse the complaining, and the workshop ended well.

Built into the workshop was a plan for incorporating population/environmental education into the schools of the principals present. Principals were asked to consider selecting two teachers from their schools to attend a summer workshop at the University of Delaware and to fill out a form so indicating.

There were many lessons to be learned from this workshop, the first in our series. Although its main purpose--awareness of population education and a plan to implement it--was well served, the workshop itself was judged by the Zero Population Growth, Population Reference Bureau and Population Institute representatives to be too "talky." Because of the number of people who were introduced and who made remarks of varying

length, the accumulative effect was to leave too little time for "hands-on" activities and no time at all for participants to fill out questionnaires on their interest in population education or to evaluate the workshop. The room arrangement was also conducive to a lecture approach. For future workshops, ZPG project staff decided to blend the positive aspects of this workshop with an increase in direct participation for the attendees.

Following the November 25 workshop, the professors from the University of Delaware held population/environment sessions at a March 1976 in-service day for Delaware teachers. Zero Population Growth financed a mailing to all state teachers of a list of the university's population and environment lesson plans and films available to teachers at low or no cost. The mailing also announced the summer population and environment courses for teachers.

In summer of 1976, the professors (Drs. Arnsdorf and Stegner) led two sections of a population/environment education course. There were 25 teachers in each section. In this course, the teachers, representing a variety of disciplines, learned to use the 150-unit Delaware materials according to the indicated subject area. For example, the math teachers gained experience in the use of activities that explore exponential population growth, arithmetic growth or GNP and per capita income. These lessons were intended to be included in each teacher's math classes the following school year. Other materials besides those developed by the Delaware team were also presented for possible future use by the teachers. A staff member of the Zero Population Growth project visited the summer classes, distributed new materials, showed films and engaged the students in games and quizzes which they could use in their own classrooms.

The teachers attending the summer workshop received either graduate credit or salary credits. During the piloting of the materials, teachers demonstrated the units to other teachers and kept a written record evaluating the materials, using several criteria. For this additional involvement, teachers again received credit. A small pilot plan using environmental education materials in this way was already in progress during the 1975-1976 school year.

The evaluation data (Chapter V) show that Delaware principals and administrators did encourage the teachers under their supervision to include population in their teaching and promoted population education in other ways consistent with their roles. One supervisor subsequently attended another population education workshop (ULPEI) in Baltimore. Following this workshop, he and a team of curriculum writers developed a semester high school course in population utilizing a synthesis of ZPG, ULPEI and University of Delaware materials. This supervisor also invited ZPG to lead a seminar on population to gifted students and their teachers. In autumn of 1977, ZPG staff was invited to lead a session on population, "Sex and the Single Planet," at the University of Delaware Conference on Human Sexuality.

Florida

In Florida, our project united the State Department of Environmental Education, regional school districts, Florida State University and volunteer environmental organizations.

The Florida State Department of Education has an active and successful environmental education program directed by C. Richard Tillis. Florida has the fastest growing population in the United States, largely due to immigration. Because the natural and social environments have been threatened by this sudden influx, the state legislature has responded to its citizens' concern by making environmental education a high priority.

The Florida State Department of Environmental Education has budgeted $200,000 for minigrants to assist in the development and implementation of environmental curricula (K-12); grants are awarded to school systems from regions throughout the state. Teachers in the districts receiving the grants devote part of their summers to exploring how certain environmental topics can be included in their school program. This process often involves the development of lesson plans, student activities, and resource lists within the conceptual framework of the State plan; the results are usually compiled and distributed to other teachers in the district and made available to teachers elsewhere in the state.

School districts may apply for minigrants in amounts as little as a few hundred dollars to as large as $10,000. In assessing the "state of the art" the State Advisory Board for Environmental Education can help shape the direction of curriculum development by favoring proposals to do curricular work in certain topics. As part of our cooperative project, Mr. Tillis encouraged the Advisory Board to offer minigrants to those districts choosing population education development. The importance of population dynamics to environmental education is well recognized in other materials developed through the minigrant plan. Thus, the cooperative ZPG population education project offered school districts consultative assistance to aid them in writing proposals for population education projects.

A two-day population education workshop was held January 8 and 9, 1976, to introduce population education to selected individuals who have the interest in and capability to implement it in their home districts and are eligible for minigrants. In large part, these people are the regional environmental education coordinators; some social studies and science coordinators and teachers were also invited (Appendix D). Some of the participants paid their own expenses for the workshop out of their environmental education budgets; others were supported by the ZPG project. The coordinator of environmental education for the state personally invited the environmental coordinators, plus two

workshop presenters and was himself the "kickoff" speaker. The workshop was held on a Friday and Saturday.

Florida State University was a cosponsor of the workshop (Appendix E). Two professors--and nationally recognized experts in population education--from the Florida State University population education graduate studies program were panelists, as was a well-known demographer from the Population Reference Bureau, which also cosponsored the workshop and provided materials. Sets of Population Profiles were donated by the Center for Information on America, and the film festival used the Florida State University's film library. Two students in the Florida State University's population education course demonstrated lesson plans currently in use in their classrooms. These lessons actively engaged the participants in experiments, simulations, and discussions. The director of the Lee County Environmental Center, also a nationally recognized environmental educator, demonstrated the use of human potential activities to involve the affective domain in population studies. He pointed out that knowledge of population and environmental problems is only a beginning and that "people must care."

Another speaker was Arthur Marshall, an active environmentalist who spearheaded the successful fight against an airport in the Everglades. He spoke on the centrality of population growth to Florida's environmental problems. Representatives of Florida chapters of Zero Population Growth also participated and offered their support to the population education problems that will take place in their areas. In addition, a representative of the Florida Audubon Society played a supporting role by demonstrating its relevant audiovisual teaching aids and by publicizing the population education project in its newsletter. Evaluations by the workshop presenters and participants indicated that the increase in active participation proved a better method of involvement in population education than did the Delaware workshop.

A tangential outcome of the ZPG population education project was the bringing together of personnel from the Florida State Department of Environmental Education and Florida State University. Following our initial planning session for this project, these parties developed a proposal for population education that will combine a standardized demographic curriculum with an examination of the impact of population change on the unique ecosystems of various Florida regions.

Evaluation data (Chapter V) indicate that many of the workshop participants have followed up on their intentions to implement population education in Florida schools. The supervisor of social studies from the county which includes Pensacola reported that he had introduced a population unit into a required high school geography course at all his schools. The

environmental education coordinator from Caravelle wrote to say that he was using the materials from the workshop in his classes and would share them at local environmental workshops. A phone call from a participant notified us that curriculum development on population had already begun at the Lee County Environmental Center. The president of the Florida Federation of ZPG chapters organized a population education workshop session for 100 teachers in Orlando in August. This session was so successful that the supervisor of Social Studies for Orlando schools scheduled an in-service day on population education for March. Other population education workshops took place in Jacksonville and Miami.

Ohio

In Ohio, ZPG initiated the organization of a two-day workshop on population education for supervisors of social studies and science and professors of education from various regions in the state. This workshop took place in late February 1976 in Grove City, Ohio.

This project brought together outstanding contributors to environmental education--the Ohio State Department of Environmental Education coordinator and four professors from the University of Cincinnati representing the departments of biology, sociology, and education.

During the fall of 1975, the state coordinator of environmental education, John Hug, organized a series of energy education workshops in cooperation with environmental education representatives from regional school districts. In the winter of 1976 he began the development of a population education component within the state's environmental education plan. The invitees to the winter workshop were mainly identified and invited by the environmental education coordinator and the professors from the University of Cincinnati; they were chosen because of their prior interest in this topic and/or due to consideration of "multiplier effect" of their position in education.

The workshop leaders consisted of ZPG project staff, the state coordinator of environmental education and the four professors. All were well-known population and environmental educators. One professor, Carl Huether, had been the director of three consecutive National Science Foundation summer institutes on population education. These intensive six week courses trained teachers from around the country in the content and techniques of population education. Another professor, Judith Schultz, is the writer of the proposal which began the ZPG project. The expertise of these professors utilized in the planning and process of the workshop and again, in the summer teacher-training institute that was the proposed outcome of the workshop.

The Grove City workshop (Appendix E), held February 20-21

(a Friday and Saturday), was notable for the atmosphere of cooperation and commitment among the participants. This was due in some measure to the invitational nature of the meeting, since people known for their environmental concern were those asked personally to attend. In addition, from the start it was clear that the participants were expected to carry out population education activities upon their return to their own education spheres. Thus the informational sessions, the materials and films demonstration, and the "hands-on" activities were observed and shared within the context of "spreading the word." Of great interest were the two presentations by junior and senior high school teachers and the small group discussions on strategies for the implementation of population education.

Also explored were ways of strengthening the role of population education within the new environmental education plan of the Ohio Academy of Science, a plan in which two of the workshop leaders were involved as advisory committee members. John Disinger and Herb Coon, directors of the computerized abstract service for environmental education, ERIC/SMEAC, also described how the ERIC system can be of help in identifying materials on population education relevant to teachers and strategists. Sample ERIC printouts of a population education computerized search were distributed at the subsequent workshop held in June. An ERIC director and one of the workshop leaders subsequently completed a book of population games and activities for elementary grades which is now available from ERIC.

After the February workshop, at least nine "spinoff" workshops took place as well as other efforts to implement population education in Ohio. The first was held at the University of Cincinnati and was staffed by the state environmental education coordinator and the University of Cincinnati professors from the Grove City workshop; it was coordinated by a University of Cincinnati student who was an intern with the Population Institute. ZPG also cosponsored this week-long workshop and provided travel funds for the 25 participants. Each participant developed lesson plans to be used in the coming school year as well as ways of sharing information about population education. The Sunnen Foundation funded much of the costs of the week-long workshop.

A one-day population education workshop was held for science and social studies teachers in the Bowling Green area. The workshop was directed by a Grove City participant, a professor of environmental education at Bowling Green University, who also devoted an entire issue of the statewide newsletter, Eco-centric to information, activities, materials and films for population education.

A summer workshop on environment and population education was held at Ohio University, directed by two professors of education who had attended the Grove City workshop. Twenty-one teachers paid tuition to attend this week-long session, and

received graduate credit.

A teacher who attended Grove City initiated a semester-long course on population and energy for teachers in the Toledo schools, and a one-day population education workshop for 50-70 teachers was held for Portage County Schools in November 1976, directed by the science supervisor of the county. Other population education activities included one-day workshops for teachers in Akron Public Schools, the Cincinnati suburban schools, the Cincinnati Catholic Schools, the Cincinnati Public Schools, the Cleveland Suburban Public Schools, the Marion Public Schools, and a one-day workshop for professors of education from around the state. A 2-hour presentation on population education was held for subject area supervisors of the Ohio State Department of Education by the state supervisor of science education. Curriculum development in population education was spearheaded by the supervisor of science education of the Cincinnati Public Schools, who attended the Grove City workshop and later an ULPEI workshop in Baltimore.

A promising development is the move toward Environmental Education certification for teachers in Ohio. If this comes to pass, minimum standards are likely to include a certain number of credits in population dynamics and population education. The presence of a population component in an overall environmental education program depends on the recognition by educators that population issues are an integral part of environmental concerns. Such a recognition has been well-fostered in the original and spinoff population education workshops. One professor shared with the Grove City participants information about the environmental education teacher-training program she inaugurated at Bowling Green University; this program may serve as a model for certification in Ohio. The enthusiasm of the coordinator of environmental education for the Ohio Department of Education has been and will continue to be central to efforts in this state. The efforts of a Population Institute intern were also crucial to the success of the spinoff workshops. Follow-up services from the ZPG project included help in planning some of these workshops and provision of free and low cost materials from those workshops for classroom use.

New Jersey

Teachers from the Bergen County school district attended a one-day workshop in May sponsored by ZPG, PRB, the New Jersey Council for Environmental Education and the Bergen County Planned Parenthood. One feature of the workshop involved ways to use the population component of an excellent computer-based program in environmental education.

Computer-Based Resource Units (CBRU) were developed under the guidance of the director of the New Jersey Council for Environmental Education (NJCEE). There are eleven units in all, each focusing on one element of the relationships which comprise environmental education. Teachers throughout the state have

received handbooks describing the content of each unit, the behavioral and conceptual objectives, and directions for obtaining the units. Variables such as the reading levels and mental ages of students, and particular interests of the class can be focused on the food and population dynamic or on density and stress. In addition, the unit can be ordered for use by the whole class or for an individual student working independently. To order units, teachers need only fill out one card and submit it to their school office.

However, Dr. Ed Ambry, director of the NJCEE felt that the population unit was inadequately utilized. He hoped that an intensive one-day workshop with teachers in one district might provide a model for future workshops in other districts or for possible modification of the unit itself. Moreover, teachers would receive additional materials and teaching techniques from the experience.

The workshop was originally scheduled for March, 1976, with the Parsippany-Troy district. However, insufficient registration, attributed by some "insiders" to teacher-administration labor disputes, forced the cancellation of the workshop.

Fortunately, the Bergen County Planned Parenthood had heard about the planned workshop and had hoped to cosponsor a similar workshop in their school district. The workshop was rescheduled for May in Bergen County. Thirty teachers and supervisors of health, science and social studies attended, as well as Planned Parenthood leaders and the pastor of the church whose meeting room served as the workshop site. ZPG paid for substitutes for some teachers so that they could attend the workshop, which was held on a school day.

The computer-based resource unit on population and the film library of the New Jersey Council for Environmental Education were discussed by its leaders, and teachers were given sample printouts. Stephen Viederman of the Population Council pointed out the many population education resources--libraries, universities, and educators--available in the area, and two staff members of the Population Reference Bureau helped the teachers explore New Jersey demography and acquainted them with the wide range of materials for the classroom. Department heads attending indicated the usefulness of the materials for their own teacher-training efforts (Appendix E).

Subsequently, the Bergen County Planned Parenthood established a population education library, purchased and showed a population education film several times in Bergen County, and voted population education activities a high priority for the following year in order to serve the teachers of Bergen County in their efforts to include population topics in the classroom. To publicize these services, Planned Parenthood sent letters to every school in the county informing them of the program. The letter also

contained a quiz on Bergen County demography and information on the CBRU resources provided by the New Jersey Council on Environmental Education. They personally informed Mr. Martin Gideon of the Bergen County Board of Education about the program and the resources available.

The department heads and teachers also engaged in population education activities including the development of population units to be infused into existing courses. For other participants' activities, see the analysis (by state) in Chapter V.

Maryland

In 1974, the Maryland State Department of Education issued and distributed Environmental Education: A Maryland Approach, a "curriculum guide (K-12)." This document, produced with assistance from the U.S. Office of Environmental Education, is an outstanding conceptual framework and encourages Maryland teachers to infuse environmental concepts into already existing courses. It stresses the multidisciplinary nature of environmental education as well as the interrelationships among social, scientific, and aesthetic considerations. The important role of population dynamics in the ecosystem is recognized.

After contacting several science and social studies teachers in Maryland, we learned that this document, although much admired, was not receiving the implementation it deserves. The teachers we spoke with attributed this situation to a need for teacher-training and for curriculum materials, including lesson plans, audiovisual aids, and student activities. Because, in our view, consideration of population change is an integral component of environmental education, we felt that our goal of implementation of population education would be well served by the implementation of Environmental Education: A Maryland Approach.

At an October 1975 meeting, the state superintendent of schools and the state coordinators of science, social studies, and aesthetics expressed their enthusiasm for a collaborative effort. They quoted the preface to A Maryland Approach, "man's long one-sided war with nature must end...education is one approach." Because other public and private agencies had expressed interest in environment/population education, a broad-based coalition exemplifying a systems approach to implementation was suggested.

The various components of the system that could "make it happen" and which had already indicated support of this idea were identified as: the Maryland State Department of Education, selected local school systems, the University of Maryland, the National Education Association and the Maryland State Teachers Association, the Urban Life/Population Education Institute, the Population Reference Bureau, the Population Institute, and Zero Population Growth. The Zero Population Growth Population Education Project served as initiator and coordinator of the

coalition, called the Maryland Environmental and Population Education Project.

A meeting of top representatives of the various organizations making up the coalition was held November 10, 1976, in Baltimore, and hosted by the Urban Life/Population Education Institute (ULPEI). This plan emerged: The State Department of Education, through its liaisons and professional meetings, would identify representatives of the counties in the state responsible for their school systems' programs in science, social studies and the humanities. These representatives would indicate their willingness to introduce or expand environmental/population education in their school systems by selecting "multiplier people"--those who would attend a three-week summer institute at the University of Maryland with the purpose of returning to their home school systems in order to incorporate population/environmental education into the school program.

Because of a cutback in summer 1976, classes to be offered at the University of Maryland, the original plan was deferred with the hope that a summer institute could be held at some future date. Instead, the representatives of the three subject areas from each county school system were invited to a one-day workshop at the University of Maryland. Representatives were requested to bring a team of two teachers who might serve as demonstrators of new ideas and materials for their respective school systems.

In preparation for this workshop, a student was hired to order selected environmental and population education materials, catalogue and place them in a permanent environmental and population education library at the Science Teaching Center in the University of Maryland College of Education. A list of the holdings was prepared for distribution at the workshop. At the same time, a Population Institute intern surveyed the faculty of the secondary and elementary education departments about their interests in environmental and population education. The professors who indicated interest were sent special invitations to the workshop.

The June 2 workshop (Friday) drew over 90 educators from throughout the state in teams of supervisors and teachers. University and other interested persons added another 25 people to the list of attendees. Participants engaged in "Food for Thought," a food/population/energy simulation game. Simultaneous sessions on population and energy, led respectively by the Zero Population Growth and Population Reference Bureau staff, and representatives of the National Science Teachers Association and the American Association for the Advancement of Science. A lunch break provided an opportunity to examine the curricular and resource materials available to teachers in the state and students and faculty of the College of Education. Introduction

and concluding remarks urging the participants to avail themselves of the opportunities provided by the environmental and population education committee were made by the supervisor of science and environmental education of the Maryland State Department of Education (Appendix E). Information about the successful Baltimore program (ULPEI) was given by the supervisor of Social Studies of the Baltimore City Schools.

In late August, letters were sent to the participants offering the services of the Environmental and Population Education Committee (University of Maryland, Zero Population Growth, Population Reference Bureau, and the State Department of Education) to local school systems. A permanent population and environmental education library was established for use by students in the University of Maryland College of Education.

There were many outcomes of the June 2 workshop. In August, a letter was sent to each participant offering the services of the Environmental and Population Education Committee (University of Maryland, Zero Population Growth, Population Reference Bureau, and the State Department of Education). Subsequently follow-up workshops were held in Montgomery County, Maryland, for secondary science teachers, teachers taking in-service courses in environmental education, and for elementary science supervisors. One of the most productive outcomes was the continued cooperation of the Maryland State Department of Education, the University of Maryland, Zero Population Growth and the Population Institute intern in promoting environmental and population education. This cooperation has contributed to the State Department of Education's development of four experimental units (population, food, land use, and energy) to be field tested in at least one school in every school district in Maryland during the 1977-1978 school year. The ZPG Population Education Resources Kit was utilized as a model for the population unit and the former associate director of the Zero Population Growth project was hired by the state department of education to produce the population unit. Worldwatch Paper #5, Twenty-Two Dimensions of the Population Problem contained in the ZPG Kit, was also purchased for mass distribution to Maryland students. ZPG material and its film "World Population" were also used by the state department of education in the development of a program on population in its environmental series for educational television.

At the University of Maryland, a presentation on environmental and population education was made by the cooperating professor, Jack Wheatley, the ZPG project director and the Population Institute intern, Anne Wilson, to the faculty of the College of Education; teacher-training materials were distributed as well as lists of the holdings of the new environmental and population collection, permanently housed in the Science Teaching Center. The professor of science education most responsible for the university's involvement has incorporated population materials

and speakers into his own environmental education classes and has continued to encourage his colleagues in this direction. A team of professors met to develop a proposal for an environmental and population education project but the effort was dropped because of the inability to find a prospective project director (lack of university incentives was involved in this situation).

The ZPG staff also received requests for workshops that it could not meet due to its other follow-up activities in Maryland and in other states. The help of the Population Institute intern was extremely helpful in extending population education outreach. Her activities included the promotion of population education at three Maryland universities and participation in a citizens' group advocating an increase in funding for environmental education.

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The next chapter presents the highlights from a questionnaire sent to all workshop participants inquiring about the population activities they were able to implement after the workshops. In addition to reporting overall activities, the activities are also analyzed by states and by the education roles of the participants in Chapter V.

Chapter IV: What Happened After the Workshops? Highlights from the Project Evaluation

After the 1975-1976 workshops, what population education activities did the participants undertake when they returned to their schools or universities? ZPG received a second grant (1976-1977) from the U.S. Office of Environmental Education to evaluate the workshops in terms of these activities--how did the participants help to institutionalize population education?

HIGHLIGHTS OF THE FINDINGS

The six tables below describe selected activities of the following groups: 1) teachers, elementary school through high school; 2) college professors, most of whom are professors of education; 3) administrators; and 4) "others," most of whom are school consultants or volunteers/staff from environmental or population organizations. These data are drawn from more detailed graphs--analyzed for total group, professional role, subject area and state--which appear in the next chapter.* The activities below are listed in order of frequency and not necessarily in order of importance to the advancement of population education.

Table 1: Highlights of Teachers' Population Education Activities

Activity	%	Activity	%
-read some/all wrkshp materials	100	-included another class in my pop. ed. activities	29
-acquired additional pop. ed. materials	86	-encouraged other teachers to teach about population	29
-shared pop. ed. ideas with other teachers and/or librarian	76	-will consider adequacy of population coverage in textbooks	29
-infused a population unit ≥ 3 hours in course	67	-disseminated pop. ed. materials and/or resource lists	29
-used workshop materials 1-2 times	57	-acquired pop. AV materials	24
-started a resource collection for population education	48	-taught minicourse on population	19
-showed population films in class	43	-wrote population curriculum	19
-suggested importance of pop. ed. to supervisor	33	-attended other pop. workshops	19
		-organized inservice workshop	10

*The questionnaire which participants answered is given in Appendix F.

Table 2: Highlights of Professors' Population Education Activities

Activity	%	Activity	%
-read some/all workshop materials	100	-acquired additional population education materials	38
-shared pop. ed. ideas with teachers and/or librarian	69	-infused population unit ≥ 3 hours in course	31
-disseminated pop. ed. materials and/or resource lists	69	-will consider adequacy of population coverage in textbooks	31
-used workshop materials 1-2 times	54	-offered own env./pop. organization as a resource to schools	31
-started a population education resource collection	46	-directed/encouraged teachers to teach about population	29
-showed population film in class	43	-organized inservice workshop	23
-was visiting class speaker on population	38	-taught minicourse on population	15
-acquired AV population materials	38		
-wrote population curriculum	38		

Table 3: Highlights of Administrators' Population Education Activities

Activity	%	Activity	
-read some/all workshop materials	92	-helped incorporate pop. ed. into state env. ed. plans	25
-shared population education ideas with teachers and/or librarians	67	-acquired additional pop. ed. materials	25
-directed/encouraged teachers to teach about population	58	-infused population unit ≥ 3 hours in course	21
-started a population education resource collection	50	-suggested importance of pop. ed. to supervisor	21
-disseminated population education materials and/or resource lists	50	-included population education in newsletter	21
-will consider adequacy of population coverage in textbooks	38	-acquired AV pop. materials	21
-used workshop materials 1-2 times	33	-engaged in community education about population education	21
-wrote population curriculum	25	-organized inservice workshop	13

Table 4: Highlights of Population Education Activities of Consultants* and Staff/Volunteers*

Activity	%	Activity	%
-read some/all workshop materials	79	-started a population resource collection	37
-shared ideas with teachers/ librarians	63	-used workshop materials 1-2 times	37
-disseminated materials and lists	63	-wrote population curriculum	32
-directed or encouraged teachers to teach about population	59	-attended other pop. workshops	26
-acquired population teaching materials	58	-was visiting speaker on pop.	26
-showed pop. film or AV in class	47	-organized an in-service workshop on population	21
-acquired population AV materials	37	-included pop. ed. in newsletter	21

*These respondents serve as outside resources to school systems

Table 5: Highlights of Population Activities of All Participants

Activity	%	Activity	%
-read some/all workshop materials	92	-acquired additional population education teaching materials	39
-shared population education ideas with teachers and/or librarians	69	-infused population unit ≥ 3 hours in course	32
-directed/encouraged teachers to teach about population	51	-acquired AV pop. materials	29
-disseminated pop. ed. materials and/or resource lists	51	-will consider adequacy of population covered in textbooks	27
-showed population films or other AV in classroom	48	-wrote population curriculum	27
-started a population education resource collection	47	-suggested importance of population education to supervisor	21
-used workshop materials 1-2 times	44	-organized inservice workshop	16
		-helped include population education in EE plans	16

Table 6: Other Findings from Total Sample

Finding	%	Finding	%
-wanted more strongly to promote population education in schools	98	-felt more knowledgeable about population issues	90
-felt workshop games and activities easily usable	97	-*did community education about population	13
-recommended that this type of workshop be more widely available	97	-*applied for funding for population education project	9

-**reached a total of 10,452 students, 1667 teachers, and 432 others
-***total of 937 hours on population education spent in classroom alone and total of 2265 hours on all population education activities
-average report card grade given ZPG pop ed project: A

*These disappointing findings suggest a need for help in these areas
**Data gathered from 77 participants
***Most participants spent one or two days (eg. 9:30 am - 3:30 pm) at workshop

The following chapter outlines and summarizes 1) the design and methodology, and 2) the analysis of results of that evaluation. The research reported here is descriptive in nature; it may or may not be generalizable to other samples. Still, we hope that in assessing the outcomes of our own program, the evaluation will suggest outcomes which other workshop organizers might expect from a similar undertaking.

Chapter V: Details of the Evaluation

DESIGN AND METHODOLOGY

Our basic objective in conducting the evaluation was to gain detailed information on population education activities initiated by workshop participants subsequent to and, at least in part as a result of our workshops. We also wished to assess the validity of the results reported by respondents (n = 77) for purposes of generalizing to the total sample (n = 186); this was done by an independent telephone survey.

QUESTIONNAIRE DEVELOPMENT

The first steps in implementing our evaluation objectives were to design a paper-and-pencil questionnaire in a form amenable to ease of participant response, efficient coding and tabulation, and clear reporting of results. The general format created was primarily that of a list of possible pop ed activities. The respondent was asked to indicate his/her participation in each activity by circling the appropriate letter (Appendix F).

While we realized that it was impossible to treat the evaluation as an experimental study we at first still wondered if it would be possible to design a questionnaire which would help us find answers to the following question: Given our participation in workshops, who did the most to advance population education in the schools: teachers, administrators, or community groups?

To answer this question, however, many factors had to be considered:

(1) Evolving nature of workshop content and format. The workshop model (which would correspond to the "treatment" in experimental research) was subject to variation in several respects. As noted in an earlier section, the last of the workshops was different from the first. The model evolved in light of new information based on continuing evaluation from the very beginning. Hence, not all participants were exposed to exactly the same workshop. To continue the experimental analogy, it would be misleading to assess activities ("treatment effects") of participants when the workshops ("treatments") themselves varied. This is especially true in light of the additional lack of control for the variable of professional role composition in the workshop audiences.

These lacks of controls, of course, were unavoidable given the primary objectives of the workshop. It would have been unthinkable to withhold improvements, or to deny participation to persons of the "wrong" role in order to hold these factors constant.

(2) The difficulty of weighting the significance of various outcomes in terms of "advancement of population education in the schools." Because research on curricular innovation and change is still in its early stages, a great deal is as yet unknown about the relative power of various activities to effect change. We were tempted to arbitrarily assign weights to each possible activity, so that respondents engaging in activities with high levels of "multiplier effect" or power could be given higher cumulative scores or indices, comparisons made and conclusions drawn. The difficulty with this procedure, however, involved the speculative nature of deciding the magnitudes of the weights. For example, how does one decide the relative importance of "devoted part of a faculty meeting to encouragement of pop ed" and "included adequacy of the coverage of population topics in my choice of textbooks?" Who can say with certainty which will have greater ultimate effect in advancing population education? To proceed on such a speculative basis or to assign weights arbitrarily was, in our opinion, unacceptable.

In fact, even figuring a gross total of number of activities engaged in--leaving aside all question of differential weights or indices--could easily be spurious. Theoretically, one person might have "read workshop materials" and done nothing else; another might have "organized an inservice workshop for teachers and/or supervisors" and done nothing else; while the former activity undoubtedly had much less multiplier effect than the latter, each would still have received an "activities score" of 1. Since assignation of numerical weights would involve some assumption of ration or interval properties that we had no proof existed, we decided to abandon all attempts to do so, and rather to report the data in as true, simple, and undistorted a fashion as possible.

Several other considerations became of interest while we worked to put together an effective questionnarie. One involved grouping of possible activities by "role". At first, it was thought advantageous to separate the lists of possible activities in the questionnaire by those most amenable to accomplishment by various roles, i.e. outcomes related to in-class instruction (to be answered by teachers), those related to supervision (to be answered by supervisors only) etc. This would have been beneficial in at least two respects: (1) it would have shortened the time required to fill out the questionnaires (responders could have skipped non-applicable sections), thus presumably increasing the number of responders; and (2) it would have facilitated a variety of comparisons.

However, the "real world" has a perverse habit of not fitting neatly into categories! Most of the activities could have been engaged in by persons of more than one role. For example, "shared ideas on population education with teachers or with the school librarian," could have been done by teachers, administrators and others; other activities could have been done by more than one role-holder, but still not by all.

To increase the complexity, it became apparent that it was quite possible for a given respondent to simultaneously hold several roles, e.g. to be a high school teacher who is also a department head (administrator), a "volunteer with a population/environmental organization" and also a part-time college teacher.

To resolve these questions, we decided to ask respondents to indicate all activities in which they had engaged, regardless of role category, while we acknowledged the non-applicability of some items to each individual respondent. In addition, we asked each respondent to indicate his/her primary role relative to population education, thus letting each make his/her own self-definitions in this regard.

A second consideration was that of segregating the activities accomplished solely as a result of the workshop from those that would have occurred anyway. Most events, of course, are not only multi-causal, but result from complex interactions of personal and social phenomena. Many of the participants were involved in population education to some degree before the pop ed workshops; most had had at least some exposure to the field. Without a great deal more information (including some psychological measurements requiring social science research methods as yet undiscovered!) it would be impossible to assess precisely the role of our workshop in participants' subsequent population education activities.

Acknowledging this, we still tried to phrase our questionnaire items such that respondents' participation in the workshop was at least a partial condition for reporting the activity, i.e. "Following the workshop and in part, due to my participation in it, I have...." This is discussed in greater detail in a later section.

DATA COLLECTION

In January 1977, after the questionnaire had undergone several stages of refinement (see Acknowledgments for professionals who contributed comments and suggestions), it was reproduced and sent to the 186 workshop participants whose names we had on file. No names were to appear on the questionnaires, although each copy was coded for purposes of follow-up. As an incentive, those who completed and returned their forms were promised an environmental poster, "Consider the Alternative."

Of the 186 in the target group, 77 (41%) returned the questionnaires. The five states were represented in this sample in proportions approximately equal to their numbers in the target population. Data were tabulated and tables developed by ZPG staff with the help of two student interns.

DESCRIPTION OF SAMPLE

As noted earlier, the population education project workshops were held in five states. Response rates from each state are illustrated in Table 7 (below).

Table 7: Respondents by State

	STATE	NUMBER QUESTIONNAIRES SENT	NUMBER QUESTIONNAIRES RETURNED	PERCENT RETURNED
1.	Delaware	38	12	40
2.	Florida	42	19	45
3.	Maryland	47	16	34
4.	New Jersey	26	14	54
5.	Ohio	33	16	48
	Total	186	77	44 (mean)

Relative proportions of respondents by primary role are illustrated in Figure 1 (below).

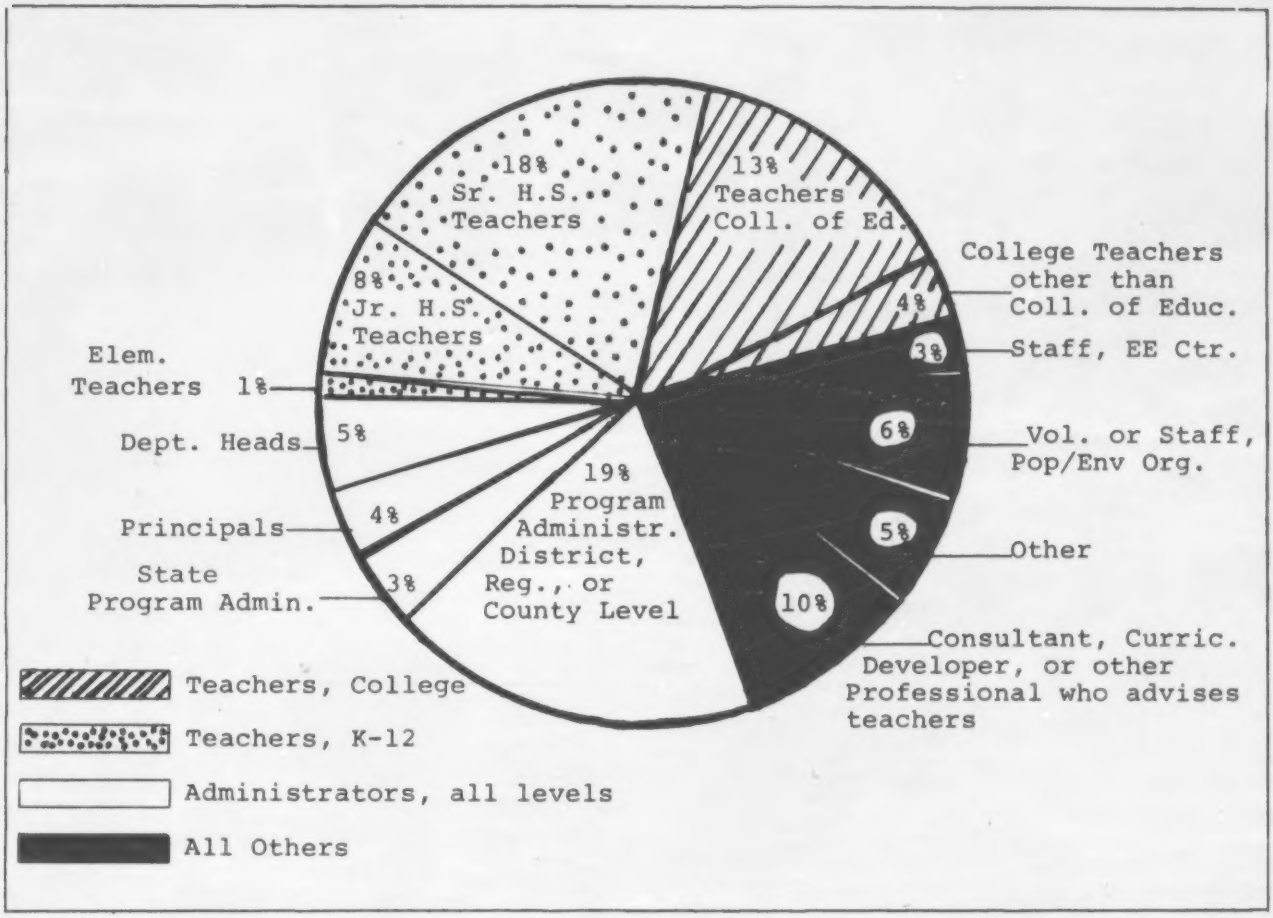

Figure 1: Primary Roles of Respondents

The three largest categories, composing 75% of the sample, were those of teachers, K-12 (27%); administrators, all levels (31%) and college teachers (17%). When respondents' primary roles were analyzed by state, considerable variation was found. For example, proportions of respondents classifying themselves as high school teachers ranged from 5.3% (Florida) to 43.8% (Maryland), and as college instructors, from 0% (New Jersey) to 37.5% (Ohio).

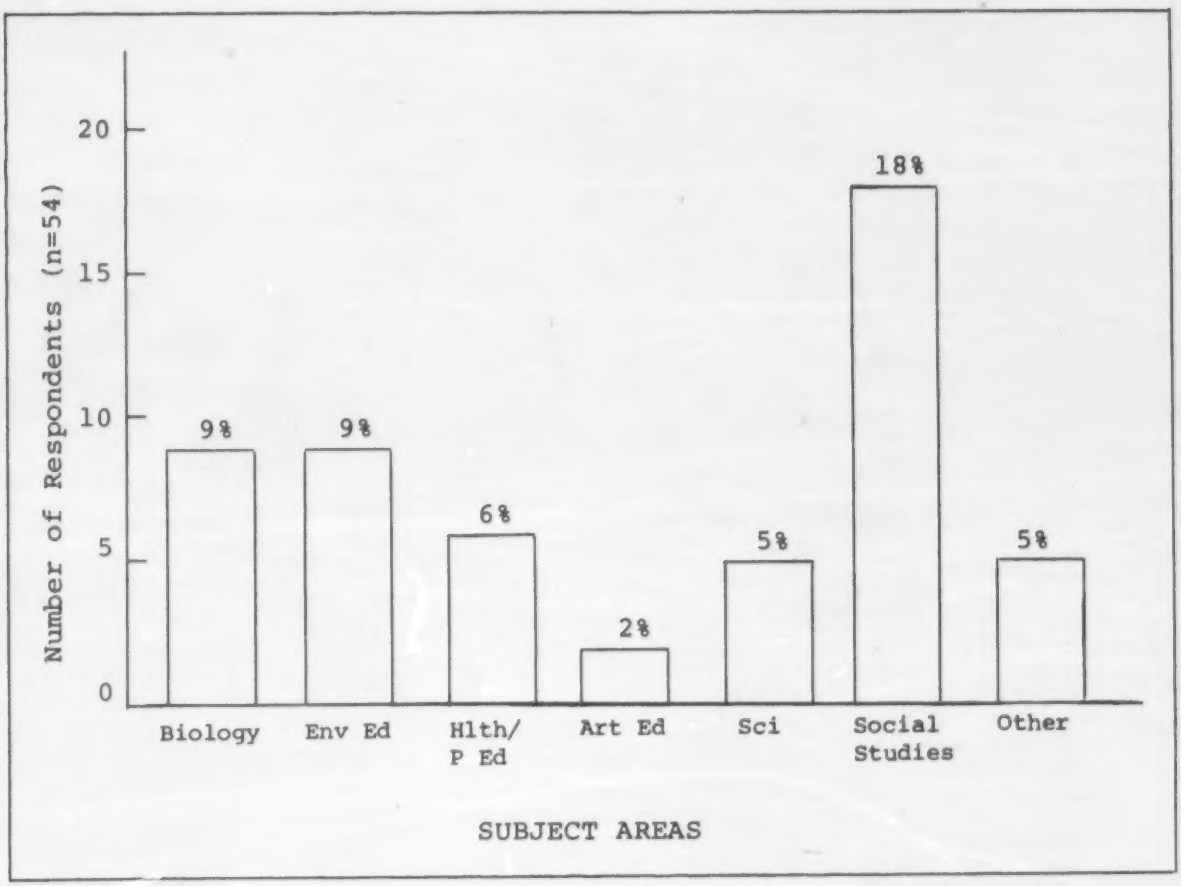

Figure 2: Primary Subject Areas of School Personnel

Of the 54 respondents who specified a subject matter area (see Figure 2), the highest number (18) chose "social studies," followed by nine each in "biology" and "environmental education" and five in "general or other science." Of the 13 other respondents, six indicated the subjects of health or physical education, two specified the field of art education, and the remaining five stated: "reading," basic skills K-12," "family and environmental living," "instructional leader for all departments," and "self-contained class."

ANALYSIS OF RESULTS

The large charts in the following pages show all participants' activities followed by small charts which analyze the same activities in terms of primary role, subject matter area, and state. Please refer to the questionnaire (Appendix F) for the actual questions respondents answered.

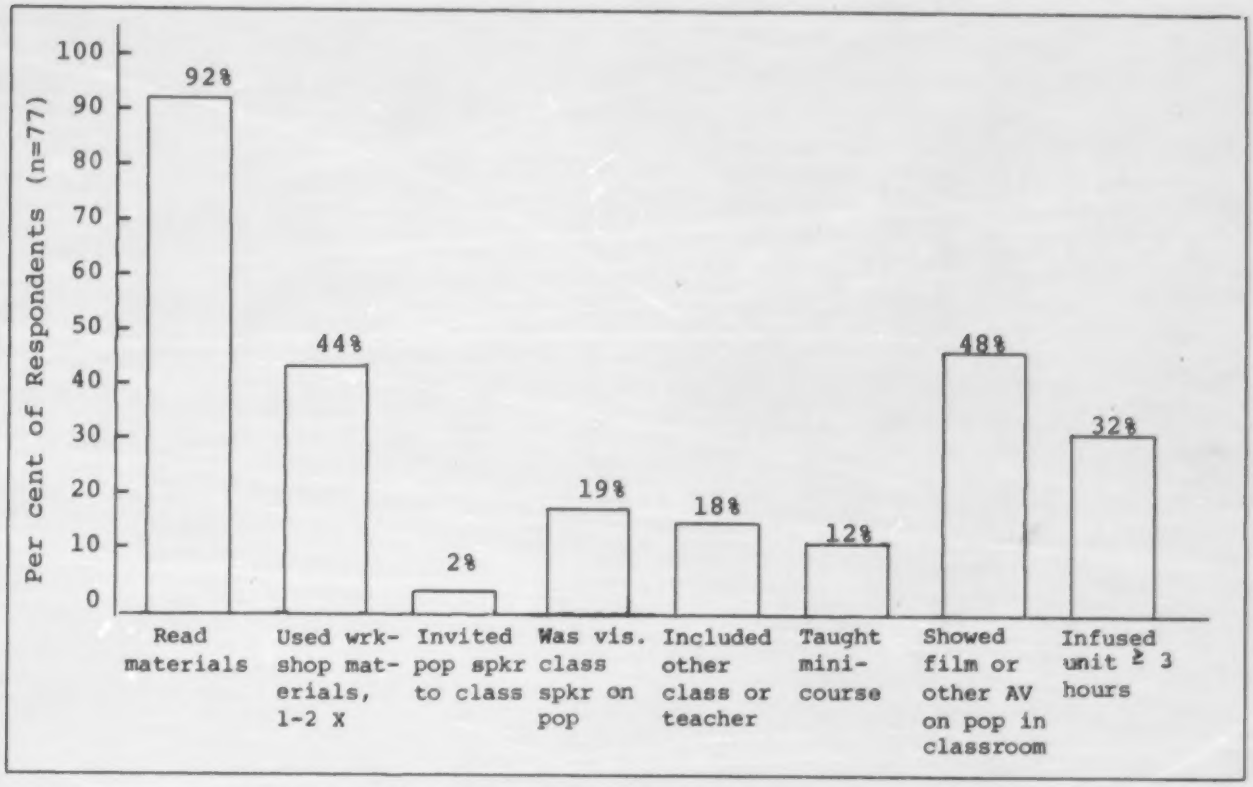

Figure 3: All Respondents' General and Classroom Activities

Almost all (92%) of the respondents reported having "read some or all of the materials obtained through the workshop or follow-up mailings." Approximately half "used the workshop materials but in not more than one or two presentations" (44%) and "showed a film or other audiovisual program on population in the classroom" (48%). Somewhat lesser proportions of respondents had "served as a visiting class speaker on population" (19%); "incorporated another class or teacher into (their) own classroom population education activity" (18%); "taught a mini-course (trimester, semester or quarter) on population for students" (12%) or had "invited a population speaker to (their) classes" (2%). Almost a third of the respondents had "infused a population unit of approximately three hours or more into their courses."

GENERAL AND CLASSROOM ACTIVITIES (continued)

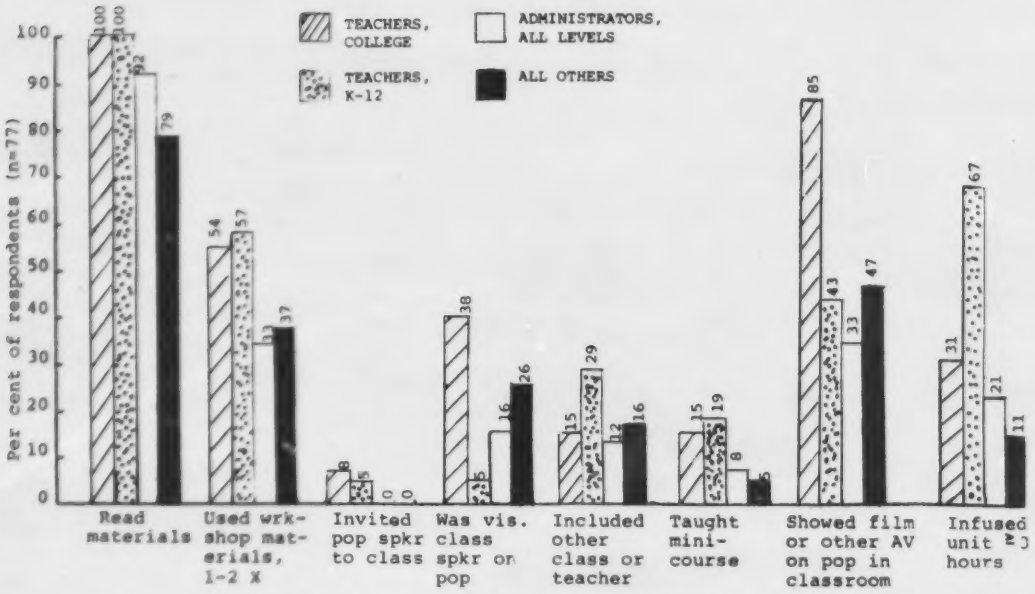

Figure 4: Respondents' General and Classroom Activities by Primary Role

It is interesting to note that 100% of the teachers, both K-12 and college, said they had "read some or all of workshop materials," in contrast to lesser numbers of those in other role categories. Perhaps this shows teacher recognition of the special relevance of the workshop materials to their work.

As might be expected in this "classroom activities" category, teachers lead the others in amount of activity in most categories. A particularly encouraging finding was that more than two-thirds of the teachers infused a population unit in their courses of at least three hours in length.

GENERAL AND CLASSROOM ACTIVITIES (continued)

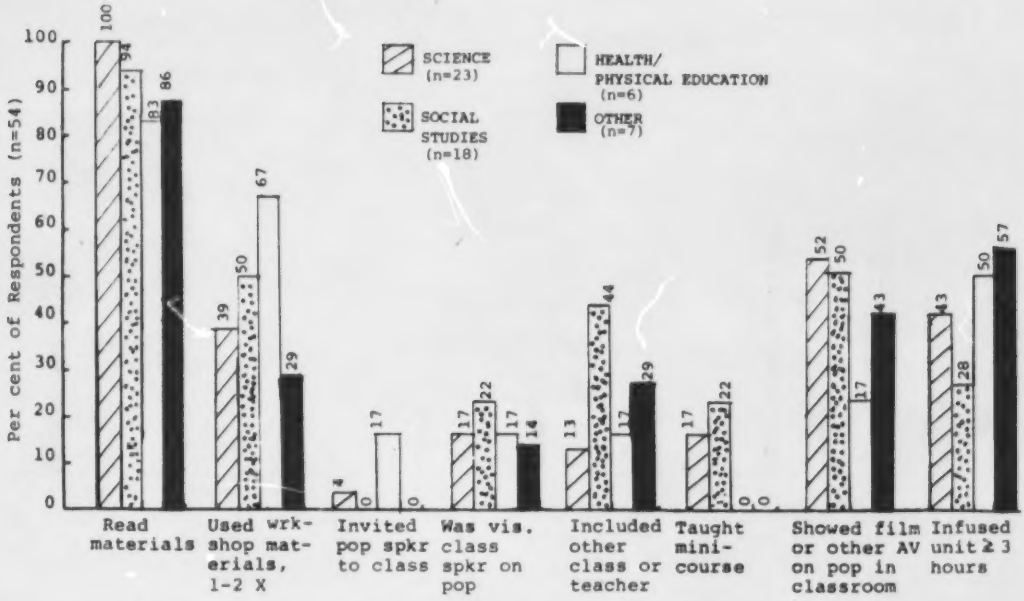

Figure 5: Respondents' General and Classroom Activities by Subject Matter Area

For this and all subsequent figures involving respondents' subject matter area, the subject area categories presented above (see 5), have been collapsed. The nine respondents in biology and the nine in environmental education* have been added to the five in science, making a total of 23. The two in art education have been added to the five in "other," making seven in that category.

Frequency of reported activity seems fairly evenly distributed across subject matter area. While some differences appear, it must be remembered that the numbers in each category are small; hence the contrasts may suggest wider discrepancies than are warranted by the data.

*It has been our experience that environmental education usually falls within science teaching departments.

GENERAL AND CLASSROOM ACTIVITIES (continued)

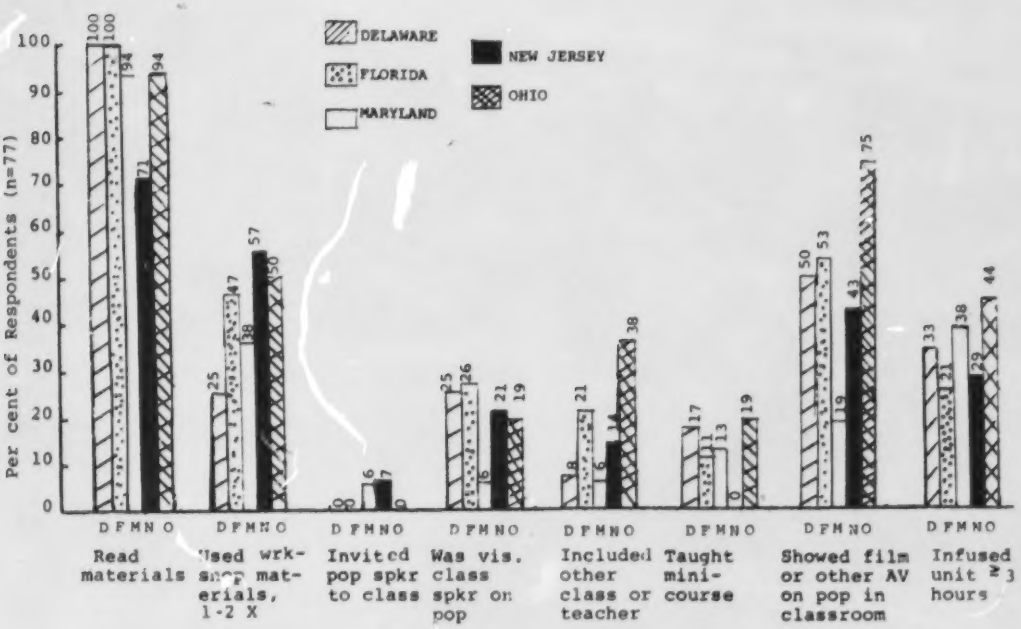

Figure 6: Respondents' General and Classroom Activities by State

When broken down by state (Figure 6), few unexpected contrasts occur. When the activities are viewed in the aggregate, no one state appears to be significantly more or less active than any other. The absence of any teaching of a minicourse for the New Jersey sample is probably accounted for by the high proportion of respondents who were "volunteers or staff of environmental or population organizations;" it seems plausible that, having no connection with the school system, they would be less likely to offer a minicourse. The high use of audiovisual aids by Ohioans is probably due to the distribution of a set of slides after the Ohio workshop and the promotion of the University of Cincinnati's low-cost population film library at the time of the workshop.

CURRICULUM AND INSERVICE ACTIVITIES

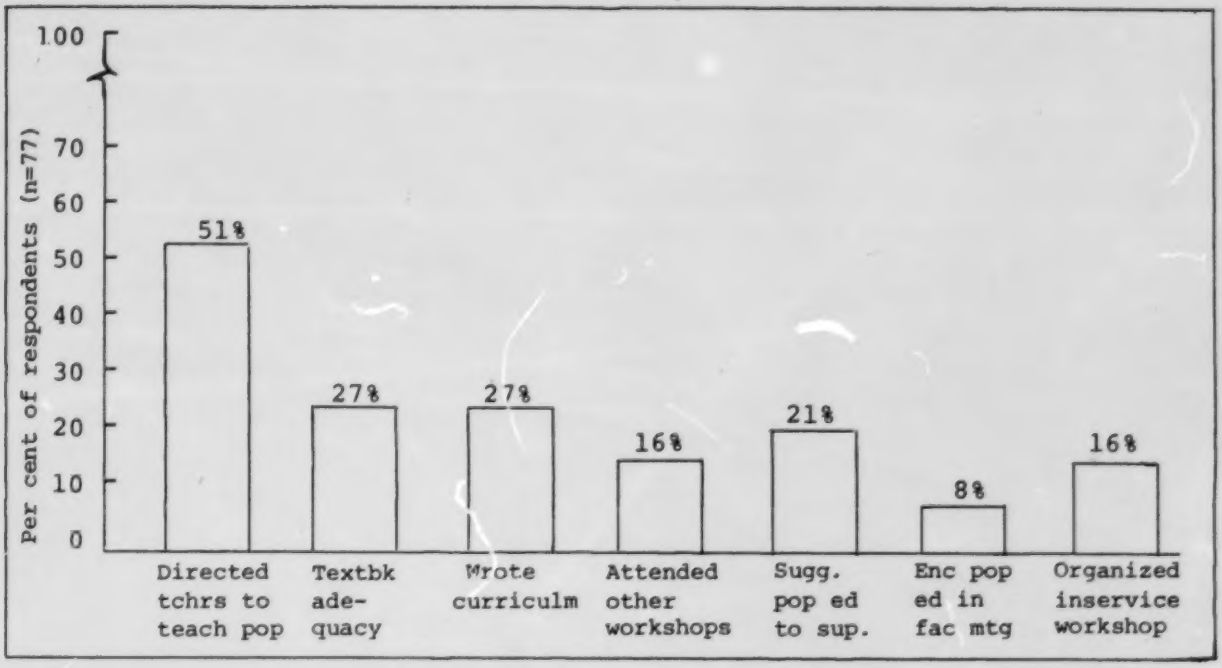

Figure 7: Respondents' Curriculum and Inservice Activities

Half of the respondents (51%) had "directed or encouraged the teachers (they) supervised or advise to teach about population." More than one-fourth (27%) had "included (or intend to include) adequacy of the coverage of population topics in (their) choice of textbooks (or in the textbooks of those they supervise or advise"). A similar proportion (27%) had engaged in population curriculum writing use at various levels.

About one-fifth (21%) of the respondents had "suggested the inclusion or expansion of population education to (his/her) department head or supervisor." About one-sixth (16%) had attended additional workshops or courses which included a focus on population education. One-sixth also reported organizing or initiating an inservice workshop, session, or course for teachers and/or supervisors. At least nine of these workshops actually took place, reaching a total estimated number of 1858 people (median audience size = 30). Six respondents (8%) had "devoted part of a faculty meeting to encouragement of population education."

CURRICULUM AND INSERVICE ACTIVITIES (continued)

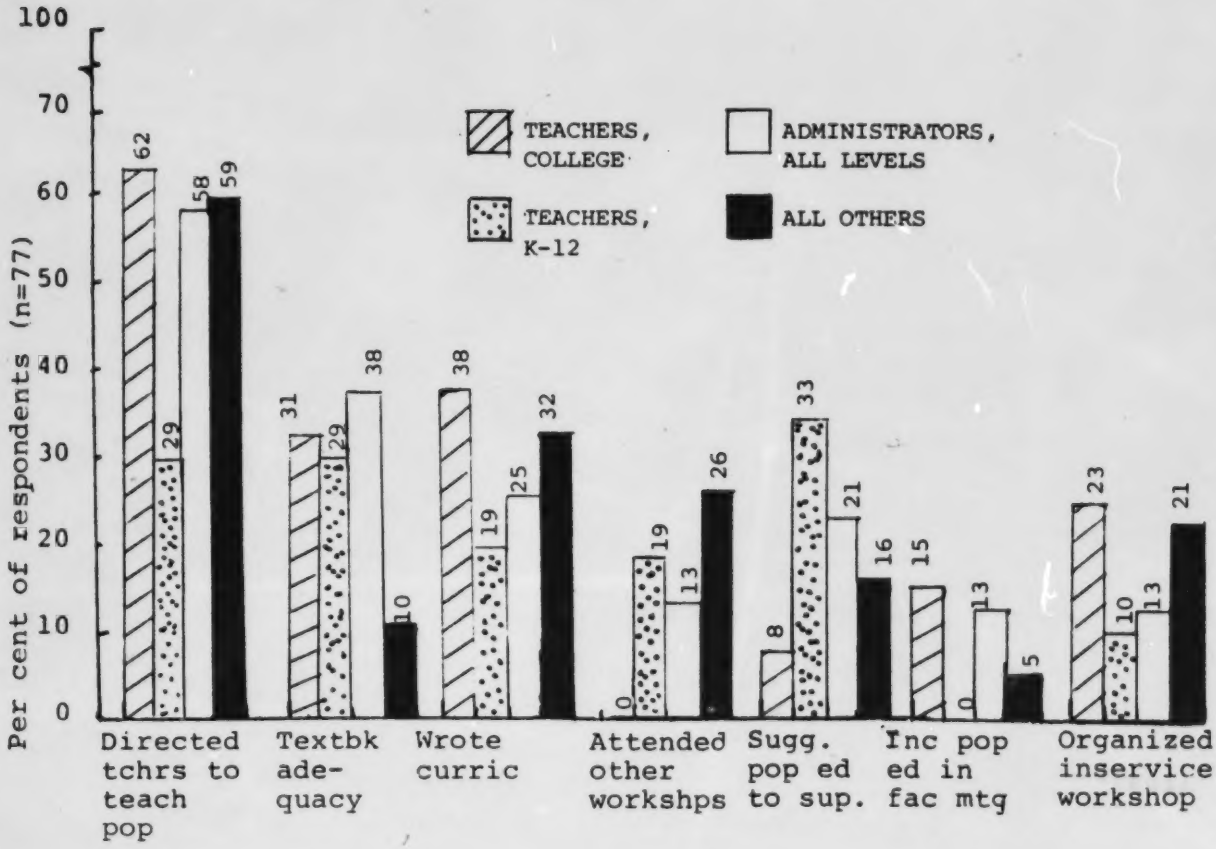

Figure 8: Respondents' Curriculum and Inservice Training Activities by Primary Role

Variations in primary role according to most of these items do not seem surprising. Since teachers could be most expected to "suggest population education to my supervisor," their leadership in this activity is not unexpected. A similar statement could be made for college teachers, administrators, and "others" concerning the item "directed or encouraged the teachers I supervise or advise to teach about population."

It was interesting that college teachers did not report attending other workshops, but did seem to be active in organizing them for others.

CURRICULUM AND INSERVICE ACTIVITIES (continued)

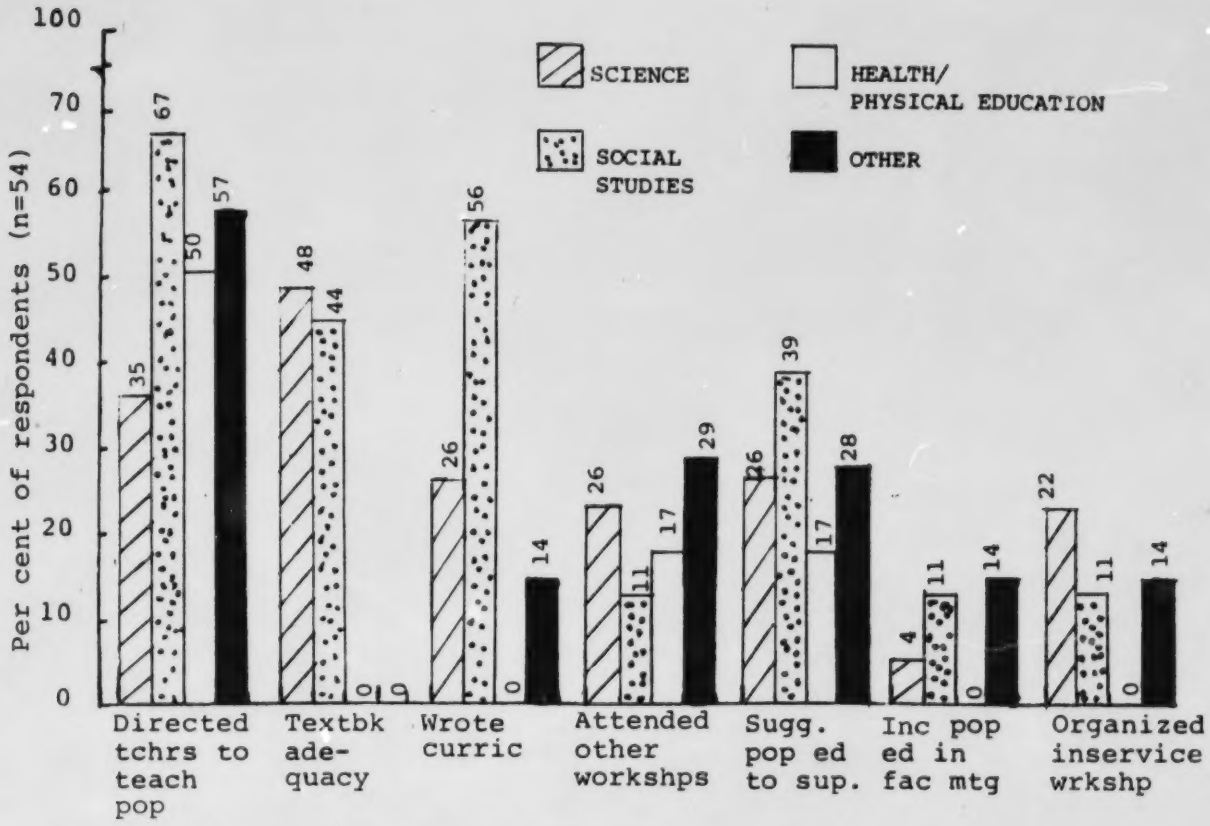

Figure 9: Respondents' Curriculum and Inservice Training Activities by Subject Matter Area

A few marked differences appear here concerning the subjects of health/physical education. While respondents in this discipline seemed active in directing teachers to teach population, none reported activity in the areas of textbook adequacy, curriculum-writing, encouragement in faculty meeting, or organization of inservice workshop. Perhaps this reflects a "newness" (and tentativeness?) of population topics in this area. It suggests intriguing questions for future research.

CURRICULUM AND INSERVICE ACTIVITIES (continued)

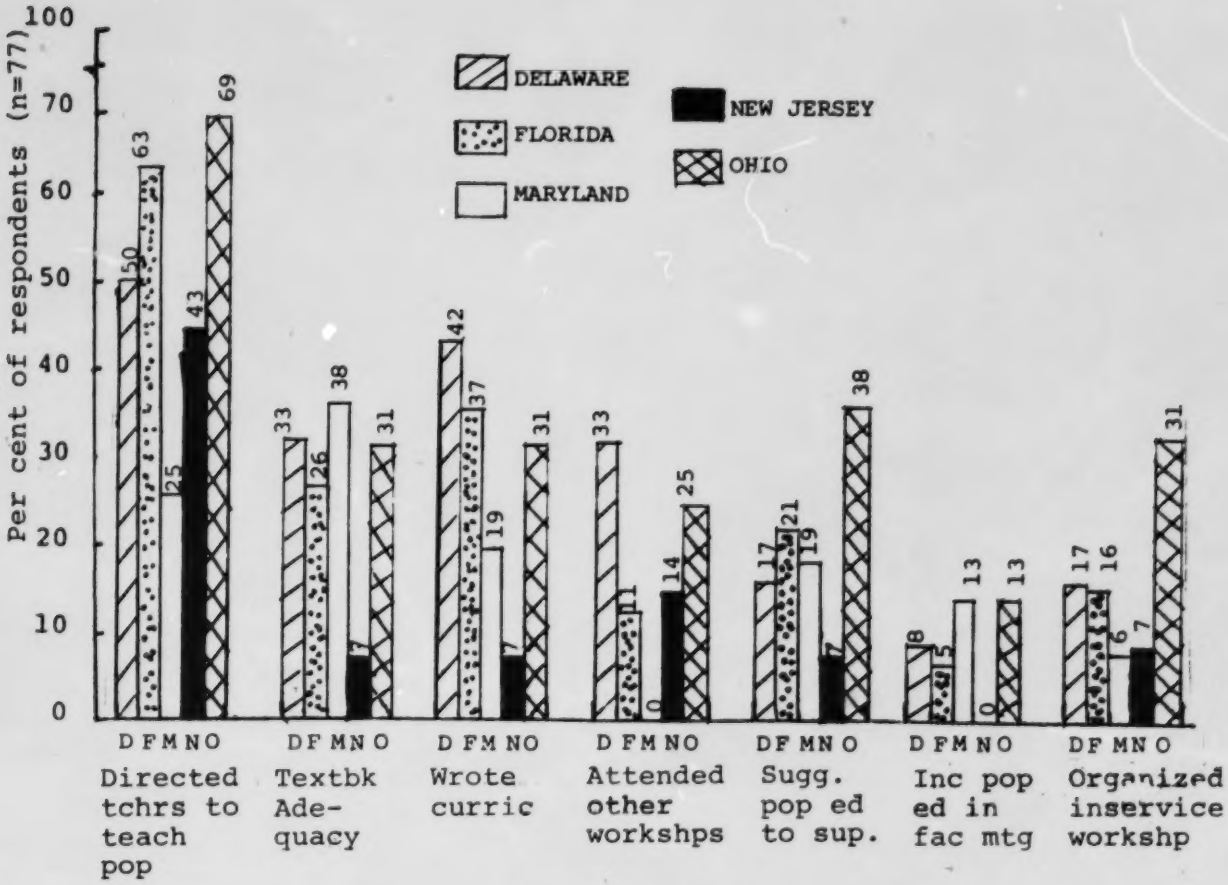

Figure 10: Respondents' Curriculum and Inservice Training Activities by State

This figure reflects a previously-noted difference in primary role composition of the workshop groups. As noted, the New Jersey sample contained a relatively high proportion of population or environmental organization staff or volunteers. As might be expected this difference is reflected in the comparatively low level of curriculum and inservice activities reported by respondents from this state. Similarly, Ohio participants had a higher proportion of college professors, a group which had the highest percent of inservice workshop (see Figure 8).

RESOURCE ACQUISITION AND SHARING

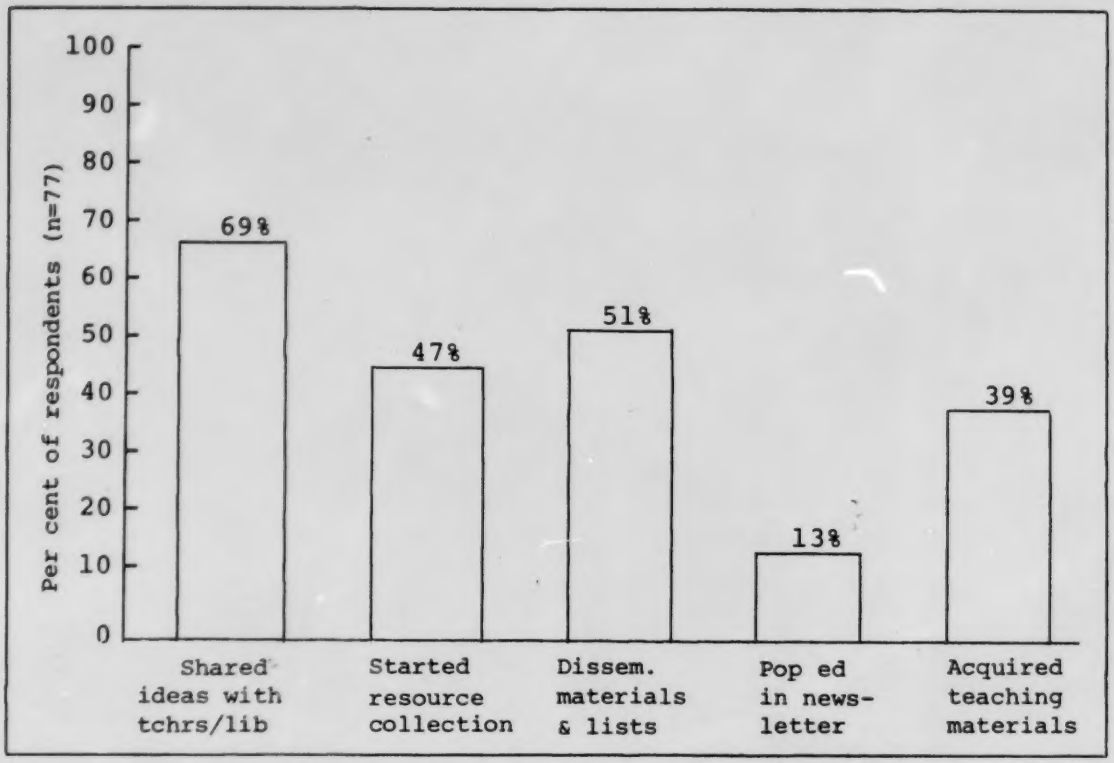

Figure 11: Resource Acquisition and Sharing

The majority of respondents (69%) reported that they had "shared ideas on population education with teachers or with the school librarian." Approximately half the sample (47%) indicated that they had "started a collection of resources which focus on or include population materials." A similar proportion (51%) had "disseminated population teaching materials or resource lists to teachers, schools or school libraries or included population resources on other such lists." Population education materials had been publicized through a newsletter by 13%, and 39% had purchased or otherwise acquired teaching materials for use in their schools or organizations.

RESOURCE ACQUISITION AND SHARING (Continued)

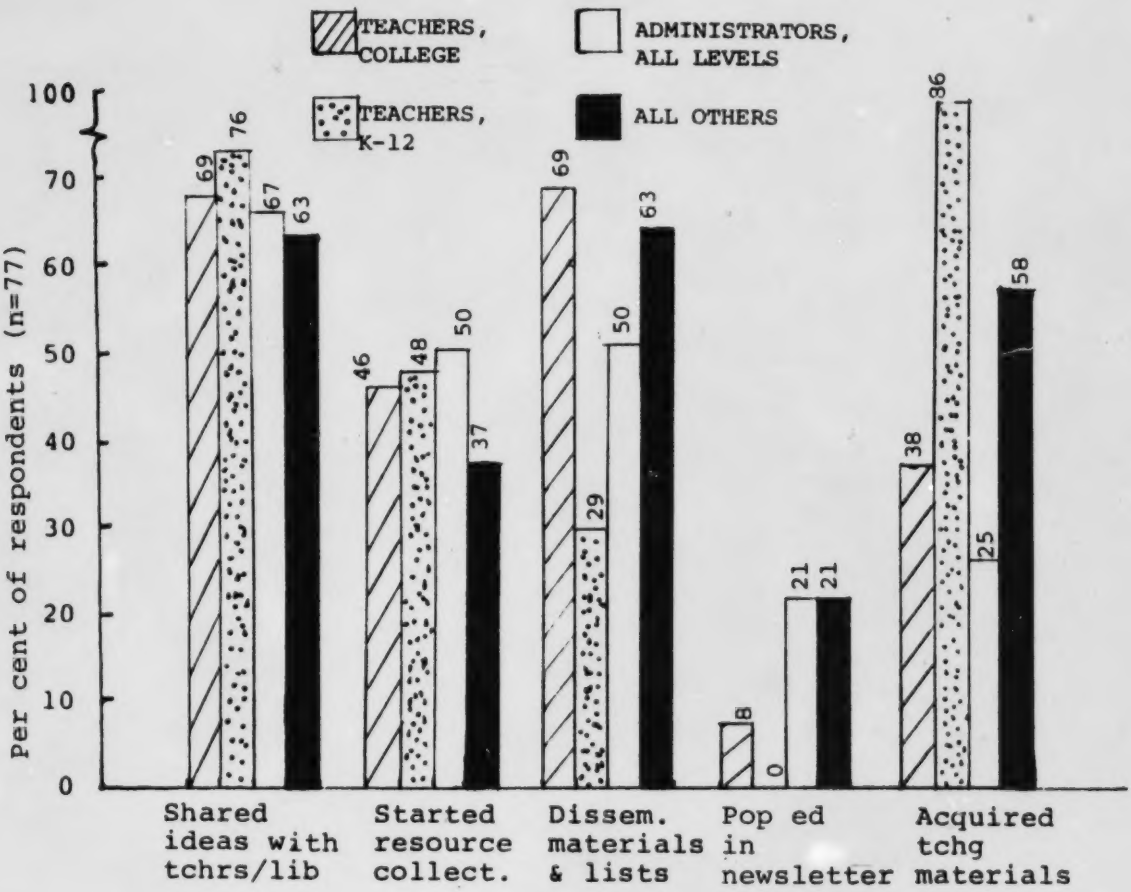

Figure 12: Resource Acquisition and Sharing by Primary Role

The trend here seems to favor a fairly even distribution of resource acquisition and sharing across roles. Contrasts in levels of activities are to be expected, e.g. administrators by definition would be less likely than teachers to concern themselves with acquiring of teaching materials.

RESOURCE ACQUISITION AND SHARING (Continued)

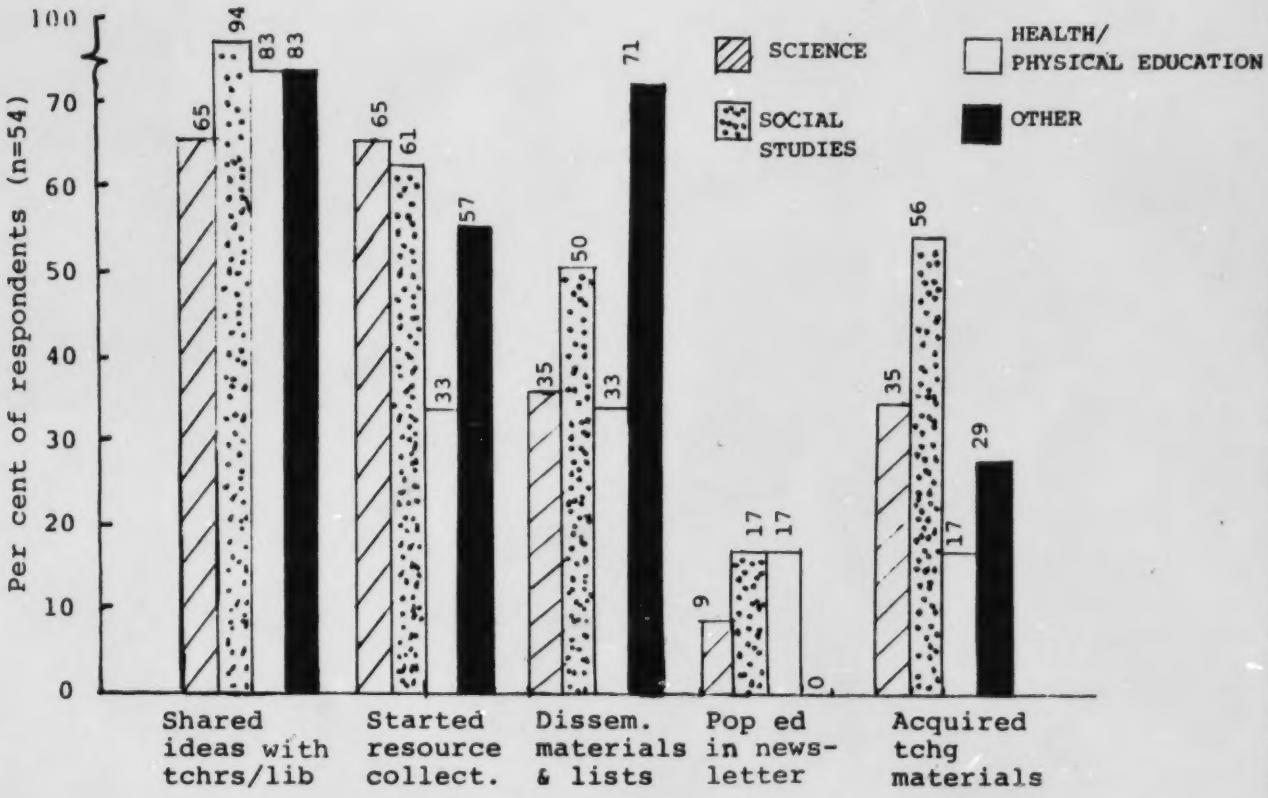

Figure 13: Resource Acquisition and Sharing by Subject Matter Area

Activity levels here seem fairly equally distributed across subject matter areas. The one puzzling occurrence is the relatively high (71%) proportion of "others" who "disseminated population teaching materials or resource lists to teachers, schools or school libraries, or included population resources on other such lists." The "other" category, you will recall, consists of two respondents in art ed and one each in "reading," "basic skills K-12," "family and environmental living," "instructional leader for all departments," and "self-contained class." An explanation for the high level of activity on this item is not readily apparent. One could speculate that a self-selection factor is operating here, i.e. those attending a pop ed workshop from fields tangential to population education, are characterized by special enthusiasm for "spreading the word."

RESOURCE ACQUISITION AND SHARING (continued)

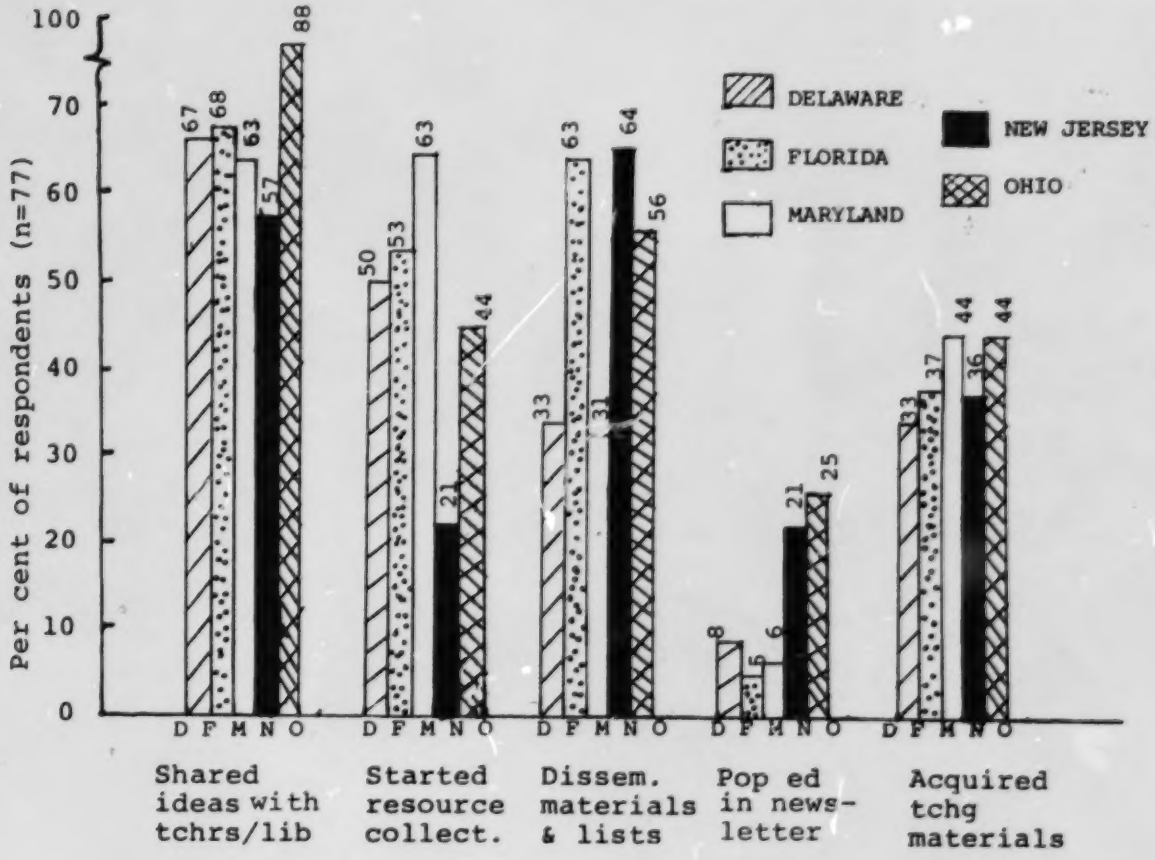

Figure 14: Resource Acquisition and Sharing by State

Except for less starting of population resource collections in New Jersey and less dissemination of population teaching materials or resource lists to teachers in Maryland and Florida patterns of resource acquisition and use were fairly evenly distributed across states.

It might be added here, parenthetically, that we know of workshop spinoff activities which have occurred since the evaluation took place. For example Maryland participants have done much with resource dissemination (see Chapter III) months after the reporting period ended.

OTHER POPULATION EDUCATION ACTIVITIES

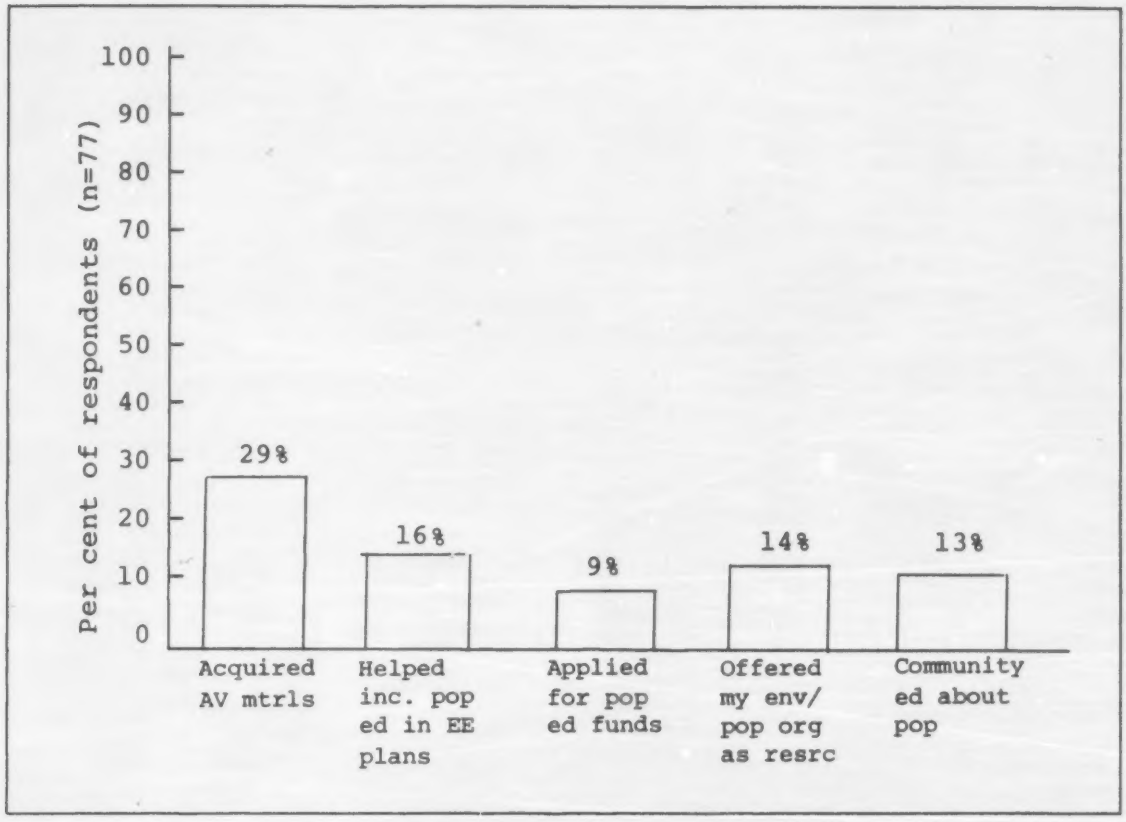

Figure 15: Respondents' Other Population Education Activities

More than one-fourth of the respondents (29%) had purchased, rented or borrowed audiovisual materials. Somewhat lesser proportions had "helped to include population education in state or regional plans or frameworks;" "applied for funds for population education;" "offered the environmental or population organization to which (they) belong as a population resource to educators" and "engaged in community education about population." Disappointingly only five respondents designated themselves primarily as "volunteer or staff member of a population or environmental organization," a number too small to draw conclusions about the population education activities.

OTHER POPULATION EDUCATION ACTIVITIES (continued)

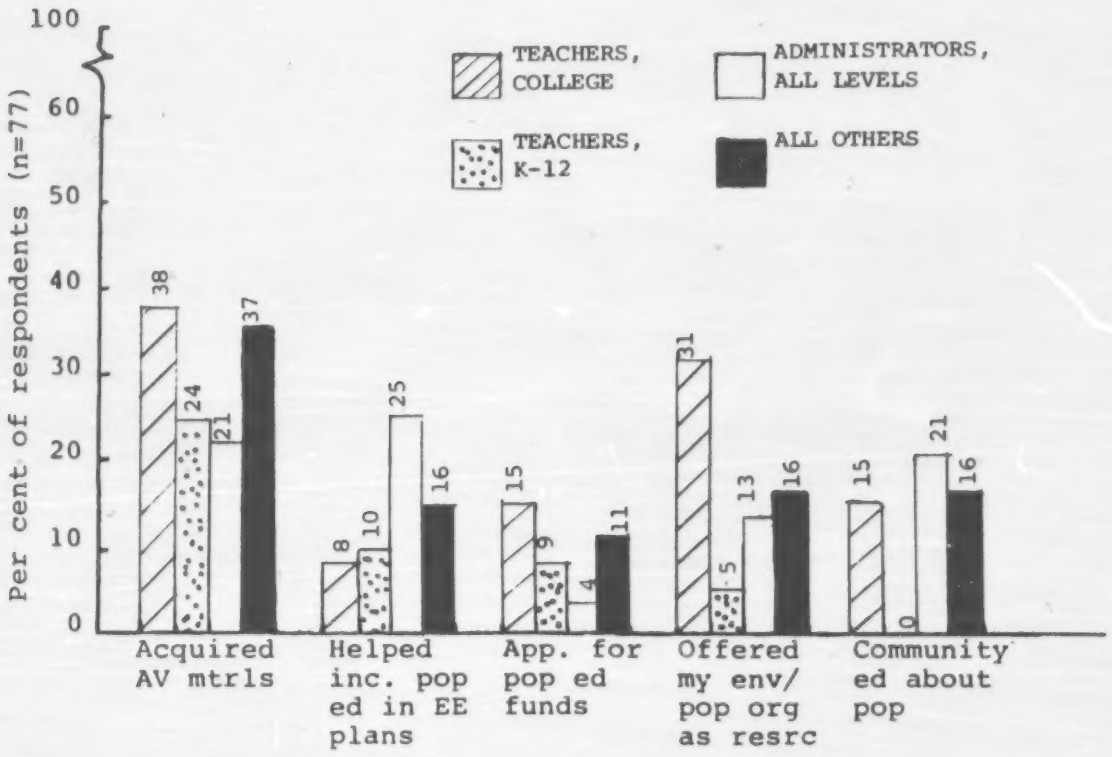

Figure 16: Respondents' Other Population Activities by Primary Role

The variations by primary role in "Other Population Activities" are not surprising in light of the differential amenability of role to these activities. For example, one would not particularly expect administrators to have "engaged in community education about population." It was encouraging to note that 25% of the administrators had "helped to include population education in state or regional environmental education plans or frameworks;" the potential multiplier effect of such activity is exciting indeed.

OTHER POPULATION EDUCATION ACTIVITIES (continued)

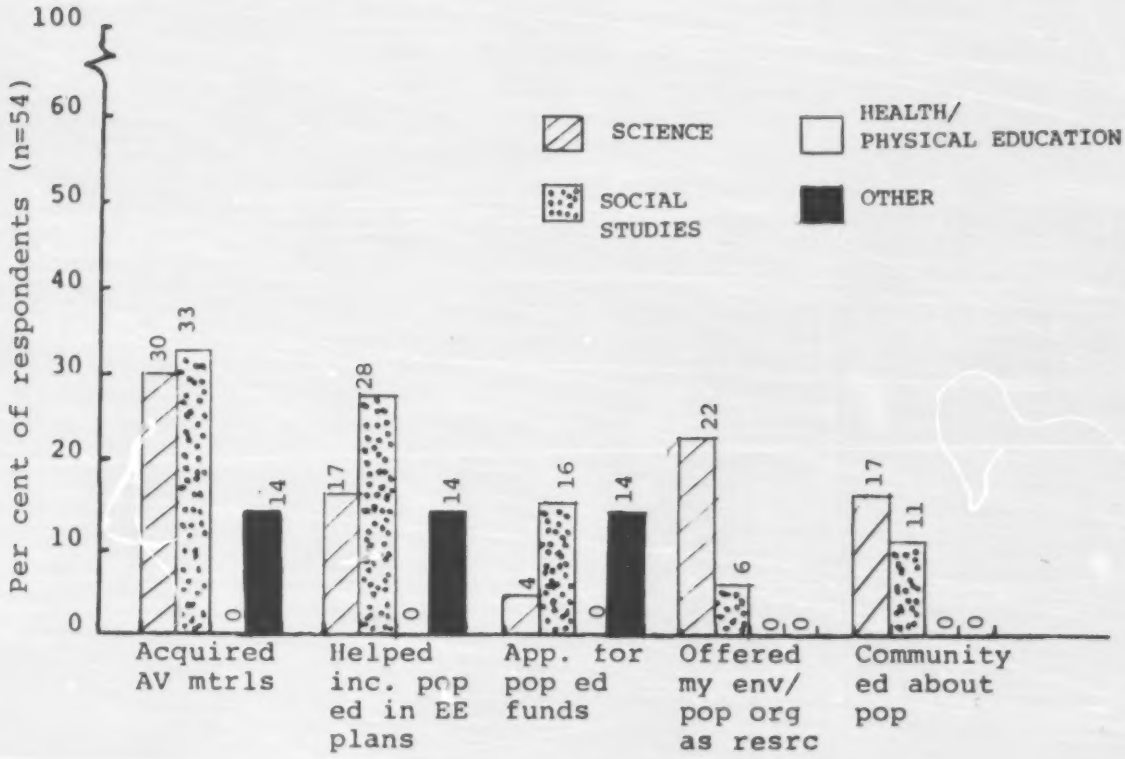

Figure 17: Respondents' Other Population Activities by Subject Matter Area

An interesting finding shown in Figure 17 is the absence of any reported activity in these categories by participants in health/physical education. Perhaps this finding suggests a promising area for work in population education. For example, might the lack of acquisition of AV materials be related to a dearth of pop ed materials relevant to this area?

OTHER POPULATION EDUCATION ACTIVITIES (continued)

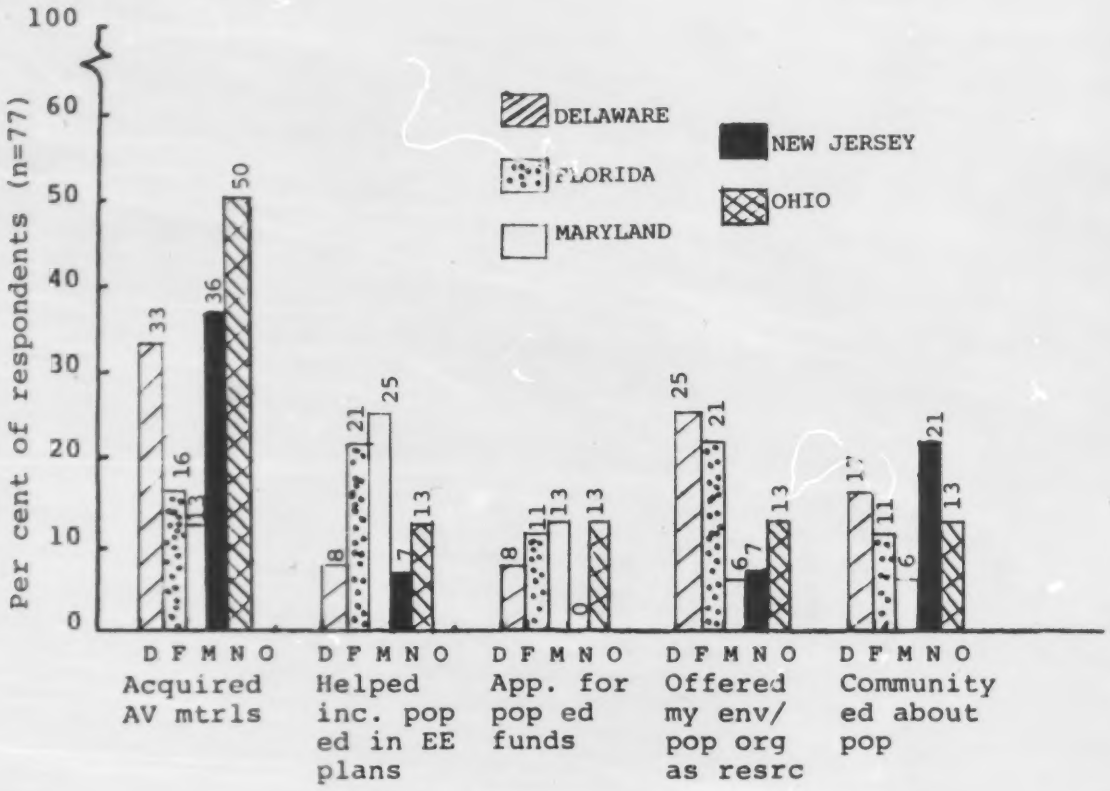

Figure 18: Respondents' Other Population Activities by State

Perhaps the most interesting bit of data in Figure 18 is that reflecting the high proportion of Ohioans who had acquired audiovisual materials. Probably one reason for this was the availability of inexpensive population education films for teachers' use through the University of Cincinnati. Another factor might be the follow-up activity engaged in by the Ohio State Department of Education (cosponsors of the workshop) after the workshop. Each participant who had indicated interest in receiving classroom slides on population topics was sent a set. See also Figure 6 which highlights Ohioans' use of AV materials.

OBSTACLES TO POPULATION EDUCATION

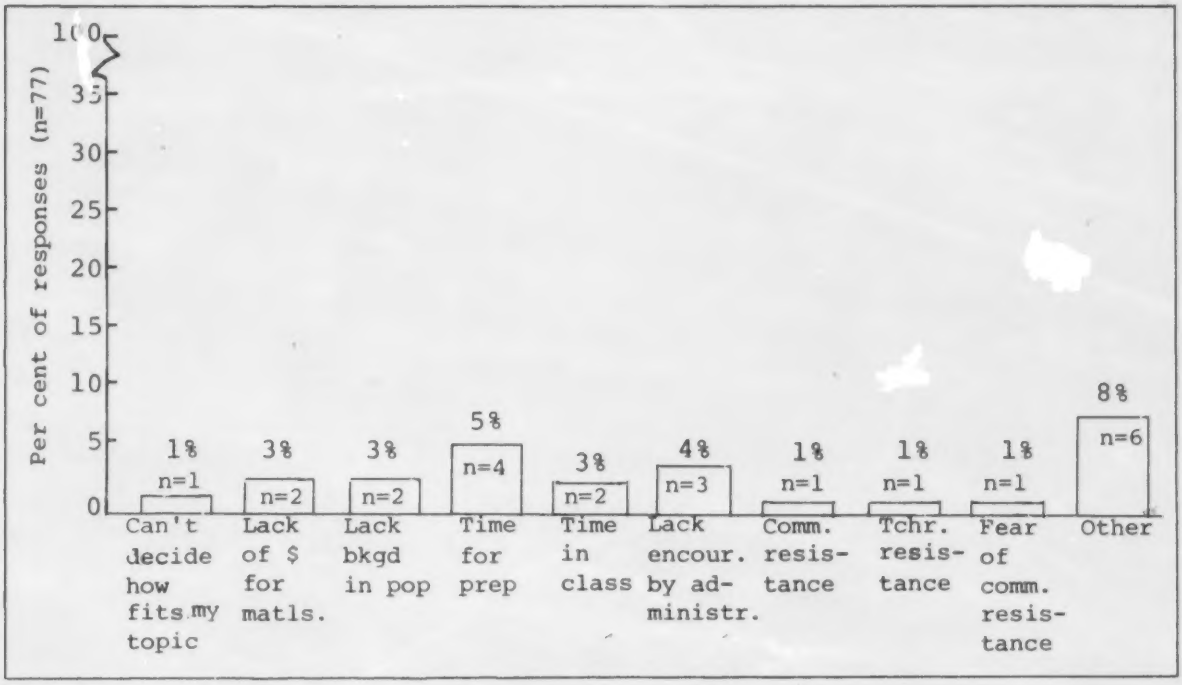

Figure 19: Most Important Reasons for Little or No Engagement in Pop Ed Activities

Of the 23 participants who felt they had been "able to engage in no (or almost no) population education activities following the workshop," reasons given with greatest frequency were "lack of time for preparation" and "lack of encouragement by school or school system administrators." Other reasons cited included "difficulty in deciding how it fits in my topic;" "lack of money for materials;" "lack of background in population;" "lack of time in my class;" "community resistance;" "resistance of the teachers I supervise or advise" and "fear of community resistance." It was interesting to note that no respondent cited "lack of knowledge about materials" or "my own lack of interest" as reasons for non-engagement in population education activities.

Of the six respondents with "other" reasons, two explained that they had left teaching, and three reported that their jobs were not amenable to education activity; the remaining respondent felt that population topics did not "fit in well" with the courses he taught. It must also be pointed out that the judgment of having engaged in little or no population education activities was left up to the respondent. Some may have contributed quite a bit to the advancement of population education

but felt they could have done more. The point of the question was to identify perceived obstacles to the implementation of population education. Readers are referred to "Population Education in the United States" by Carl Huether and Susan Gustavus for obstacles identified by a national random sample of high school teachers.

Summary of Spinoff Activities

Through these and other activities, respondents estimated that ("following the workshop or project and, in part, due to their participation in it") they had reached a total of 10,452 students, 1667 teachers, and 432 "others." An estimated 937 hours had been spent in population education in the classroom, and a total of 2265 hours on pop ed activities, i.e. "reading, organizing and presenting workshops, preparing for and teaching classes, etc.*"

Attitudinal Data

Many educational theorists today support a model of classroom instruction which engages the "whole student"--his/her attitudes as well as cognitions. While our immediate "classroom" was our workshop and our "students" were teachers and administrators, we nonetheless were interested in the affective side of their workshop experience. For this reason, we included ten attitudinal items concerned with participants' attitudes and preferences. The results are discussed on the following pages.

*These figures reflect the answers of only those respondents who were willing to provide numerical estimates. Many respondents refused to do so, replying "innumerable," "lots," etc. instead. Thus, these totals are believed to be conservative estimates.

ATTITUDES

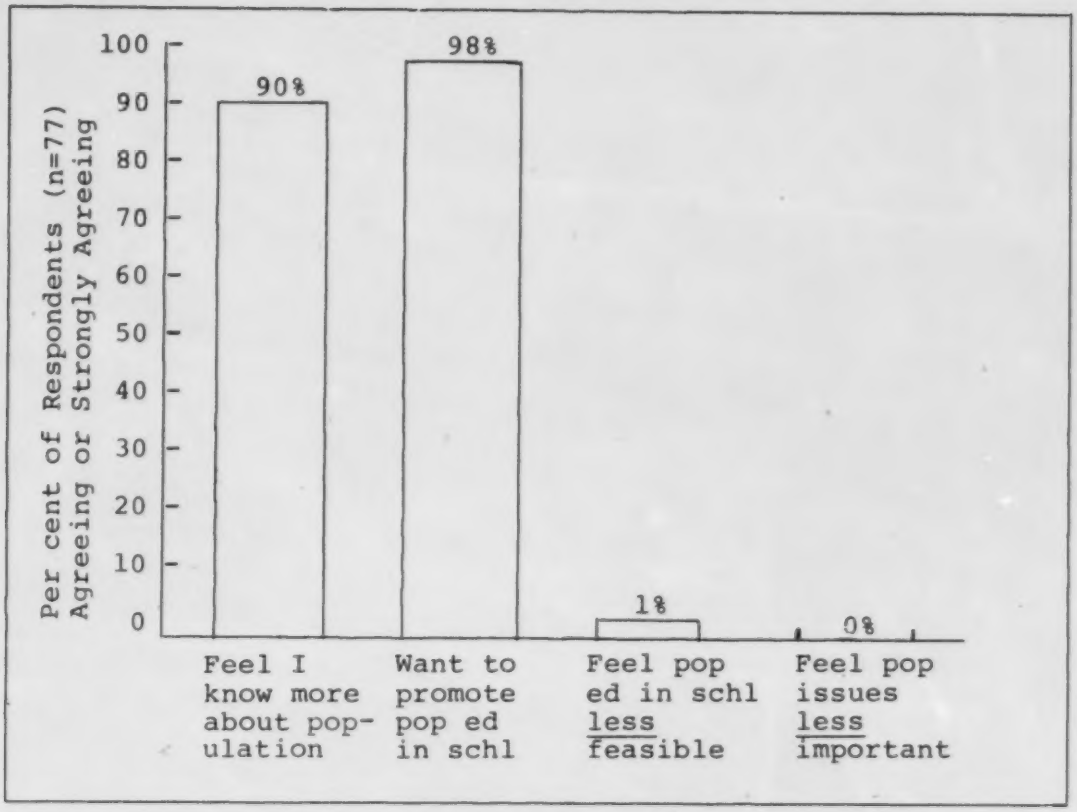

Figure 20: Respondents' Attitudes Toward Population Issues and Population Education

Respondents indicated highly favorable attitudes toward population education in the schools and toward the importance of population issues. "Following the workshop or project and, in part, as a result of (their) participation in it," 90% agreed or strongly agreed that "I feel I know a lot more about population issues." None agreed or strongly agreed that "I feel that population issues are even less important." In contrast, a very gratifying 98% agreed or strongly agreed that "I want to do what I can to promote the teaching of population in the schools." Only 1% agreed with the statement, "I feel population education in the schools is less practical or feasible."

ATTITUDES (Continued)

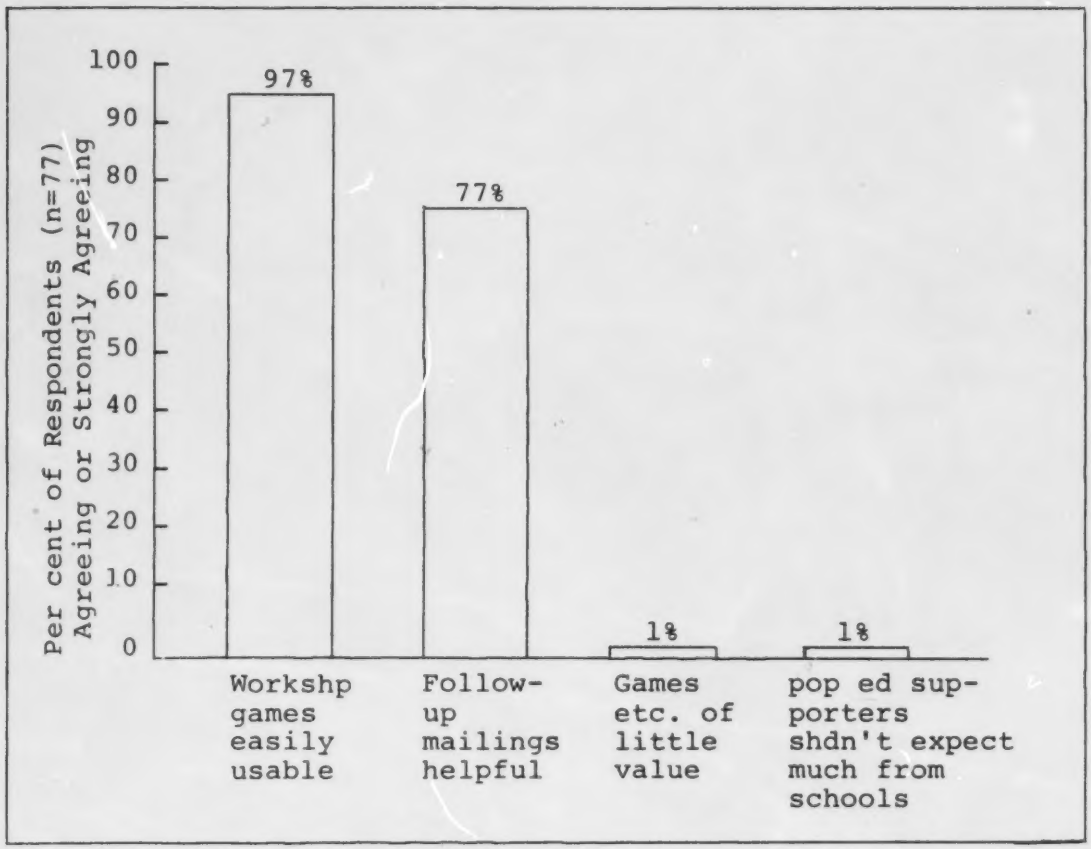

Figure 21: Respondents' Attitudes Toward ZPG Project and Pop Ed

Of the 77 respondents, an overwhelming 97% agreed or strongly agreed with this statement: "I feel that, in general, the games and demonstrations illustrated at the workshop are easily usable by most teachers." Only 1 person agreed that "I feel that, in general, the "games and demonstrations are of little educational value to students."

77% of respondents agreed or strongly agreed that "I feel that the follow-up mailings have been quite helpful." Only 1 person agreed that "I feel that supporters of population education haven't the right to expect very much from the schools."

Other Findings

With respect to the role composition of workshop participants, respondents almost unanimously (95%) agreed or strongly agreed that "it is a good idea to have a mixture of roles represented among workshop participants, (i.e. inclusion of teachers, administrators, volunteers, etc.) rather than teachers alone, supervisors alone, etc.

While we collected no data on respondents' reasons for feeling as they did, we agreed with them. A key ingredient for a successful workshop, we believe, is the mix of roles among participants. Supervisors find it reassuring that teachers are enthusiastic about population education and vice versa; staff and volunteers of citizens environmental/population groups perceive educators' interest and are less hesitant to offer themselves as population education resources for the schools. A momentum of enthusiasm builds which might not otherwise occur.

On the item relating to subject area representation at the workshops, a large majority (90%) of respondents disagreed or strongly disagreed with the statement, "I prefer to have only one discipline represented among workshop participants, i.e. only science, or only social studies, etc." In other words, most respondents preferred the interdisciplinary subject area focus of the workshop rather than a more homogeneous arrangement.

In summary, respondents almost unanimously reported enhanced knowledge of and respect for the importance of population issues as a result of the workshop; almost all also felt that the projects and games demonstrated were easily usable by students. A majority felt that the follow-up mailings were helpful. Almost all preferred the mixed role composition and interdisciplinary subject area focus of the workshop to any other.

Comparisons of respondents' answers on the attitudinal items by primary role yielded no significant differences.

Written Comments

In several places throughout the questionnaire, participants were given the opportunity to respond to open-ended items. Many constructive suggestions as well as praise (and a few negative comments) were given (see Appendix G). 71 of the 73 respondents answering this item (97%) recommended that this type of workshop be made more widely available. (Only two actually recommended against its availability; four did not answer the item.)

Grade Given the Workshop and Project

While fully aware of the frailties of the letter-grade system of evaluation in education, we nevertheless wished to

gain a rough idea--after all was said and done--of what the respondents thought of the project.* After assigning each possible grade a numerical value, and finding the mean, the final grade for the project was determined to be an A!

*Participants were asked to assign the project a letter grade: A+, A, A-, B+, B, B-, C+, C, C-, D or F.

Chapter VI: The Independent Telephone Validation Study

It is well-known that even a well-designed and conscientiously executed study is subject to many possible sources of bias. To investigate the validity of the responses of our earlier sample, we hired a consultant, Andrew J. Leighton*, to interview two sub-samples: one which was representative of those who had previously completed and returned our evaluation questionnaire (i.e. "Responders") and one representative sample of those who had not ("Non-Responders"). In this section, we review a number of sources of bias relevant to our study, present the results of the validation research and discuss its findings.

Validity. Validity in general is concerned with whether an instrument measures what it purports to measure. Three types of validity will be discussed in relation to the present study: internal, external, and content.

(1). Internal Validity: Internal validity refers to the extent to which only one thing, a treatment variable, can be called the cause of a change in a group of subjects, i.e. the extent to which rival hypotheses can be ruled out.[15]

Since no baseline data on participants' level of pop ed activity existed prior to the workshops, we couldn't measure changes on the "dependent variable," i.e. we couldn't be absolutely certain of the degree to which any change in activity resulted from participation in the workshop. Also, because a variety of influences contribute to a given occurrence, it would be inaccurate to claim that any of all pop ed activities reported by the participants occurred solely because of our workshops. However, an indication we do have of the workshop's role in subsequent participant activity is the stem preceding each group of items which reads, "Following the workshop and in part due to my participation in it, I have...." Can respondents be relied upon to 1) know whether their activity was at least partially attributable to their participation in the workshop, and 2) to report it honestly? To the extent the answer to these questions is affirmative, the wording of this stem mitigates threats to internal validity.

(2). External Validity: External validity refers to the extent to which results can be generalized to groups other than the one under consideration. Of immediate concern to us was the degree to which the responses of the 77 respondents were representative of the entire target population of 186.

*Mr. Leighton was a former research assistant at the Population Council and is presently Assistant Director of Population Education at the Population Reference Bureau. He has an M.A. in education, specializing in population education, from Teachers College, Columbia University.

Might "selection threats" play a role? For example, what characterisitics might differentiate members of the target population who completed and returned the questionnaire from those who didn't? Factors of social desirability might dispose those who had engaged in high levels of pop ed activity to return the questionnaires at a higher rate than those with low levels of activity. This was a basic issue we sought to deal within the design of the follow-up validity study.

(3). Content Validity: Content validity refers to the extent to which the content of a measure is representative of the universe of the content of the property being measured.[15] In this study, the property under consideration is that of pop ed activities. A wide range and variety of areas is considered, including classroom, curriculum development, inservice training, resource sharing and dissemination and community education. Another item, which is open-ended asks participants to list any "population education activities which have not been described elsewhere."

In addition to the range of potential activity areas represented and the variety of response modes in which to describe these activities, the questionnaire was submitted to several professionals in population education and curriculum change for appraisal of content. Relevant suggestions were incorporated. For these reasons a fair degree of content validity in the evaluation instrument can be assumed.

Design of Follow-up Validity Study

Our objectives in designing this study were two-fold:

1. To investigate the extent to which Non-responders (those who were sent questionnaires but failed to return them) differed in the extent of their population education activities from the Responders. (Was there perhaps a greater tendency for those who had done more population education to return our questionnaire, thus yielding a falsely bright picture of activity levels following the workshop?)

2. To investigate the extent to which social desirability factors might distort the answers given us by Responders. (Would they claim the same levels of activity when interviewed by someone they had never met as they had claimed on coded questionnaires they knew we would read and could match to their names?)

To implement these objectives, we first adapted our original evaluation questionnaires for telephone use (see Appendix H). Although in the interest of telephone time some portions, such as the attitudinal section, were omitted, care was taken to preserve the content of the activities section,

and to keep the wording of the new questionnaire as close as possible to that of the original.

The interviewer was given instructions (see Appendix I) designed to elicit responses which would be as honest and objective as possible.

Two alphabetical lists were drawn up*. One consisted of the names of Responders by state, and the other of Non-responders. For the "Responder" sample, two names from each state were randomly selected (using a table of random numbers), with a third and fourth alternate chosen for each in case the first choices were incapable of being reached. A similar procedure was followed for the "Non-responder" sample, except that four names were chosen from each state, with a fifth and sixth alternate chosen for each.

The telephone interviews were conducted during April 19-24, 1977. For further information on procedure, see interviewer's report (Appendix J).

*The names of participants who had proved "unreachable" in our mailing of the original questionnaire were ommitted.

Analysis

Table 8: General and Classroom Activities

	Sample		Validation Sample			
		n = 77	Responders n = 10		Non-responders* n = 20	
	n	%	n	%	n	%
F-1 Read some or all of materials	71	92	10	100	16	80
F-2 Used workshop materials, 1-2 present	34	44	4	40	9	45
F-3 Inv. pop. speaker to class	2	2	2	20	1	5
F-4 Was vis. cls. spr. on population	15	19	5	50	6	30
F-5 Included another cls. or tchr.	14	18	3	30	4	20
F-6 Taught minicourse	9	12	0	0	3	15
F-7 Showed film	37	48	7	70	8	40

*Two in the "Non-respondents" sample did not recall attending workshop and refused interview.

An inspection of this table reveals that in general, the Responders claimed similar or higher activity levels in the interview than on their questionnaires. Overall, the Non-Responders also tended to approximate or surpass the original sample in their reported level of population education activity.

Table 9: Curriculum Activities

	Sample		Validation Sample			
		n = 77	Responders	n = 10	Non-respond.	n = 20
	n	%	n	%	n	%
G-1 Infused 3 hr. unit as struct. part of my courses	25	32	6	60	6	30
G-2 Engaged in curriculum writing	21	27	6	60	4	20
G-2a For a school	8	10	4	40	0	0
G-2b For a system	12	16	2	20	2	10
G-2c For a state	3	4	0	0	1	5
G-2d For the nation	1	1	1	10	1	5
G-3 Directed teachers to teach pop	39	51	9	90	11	55
G-4 Textbook adequacy	21	27	3	30	6	30

With respect to curriculum activities, Responders tended to surpass the original sample in reported activity levels. The Non-responders, in most cases, approximated the original sample in activity level.

Table 10: Inservice Training Activities

	Sample		Validation Sample			
		n = 77	Responders n = 10		Non-responders n = 20	
	n	%	n	%	n	%
G-5 Attended additional wkshps. or courses	12	16	3	30	3	15
G-6a Organized inservice workshop	12	16	2	20	2	10
G-6b Number workshops actually held	10	13	2	20	2	10
G-7 Suggested incl. or exp. of pop ed to dept. hd.	16	21	5	50	7	35
G-8 Devoted part of faculty meet. to pop ed	6	8	4	40	7	35

As this table shows, Responders again surpassed the original sample in their level of reported inservice training activity. While the Non-responders reported slightly less activity in three categories, they far exceeded the original sample in the last two.

Table 11: Resource Acquisition and Sharing

	Sample		Validation Sample			
		n=77	Responders n=10		Non-respond. n=20	
	n	%	n	%	n	%
H-1 Shared ideas with teachers/lib.	53	69	10	100	15	75
H-2 Started Resource collection	36	41	10	100*	13	65*
H-3 Dissem. materials and lists	39	51	7	70	10	50
H-4 Publicized pop ed mat'l. thru newsltr	10	13	1	10	2	10
H-5 Acquired Teaching materials	30	39	6	60	10	50

*interviewer included "strengthened" (an existing collection) in his criteria for a "yes" response

Except in one case, Responders reported a higher level of resource acquisition and sharing than did the original sample. In all but two categories, the same was true of the Non-responders sample. As noted, an explanation for the very high levels in the category on resource collection might be the interviewer's modification of that item to read: "Have you started or strengthened a collection of resources which focus on or include population materials?"

Table 12: Other Population Activities

	Sample		Validation Sample			
	n=77		Responders n=10		Non-respond n=20	
	n	%	n	%	n	%
I-1 Acquired AV Materials	22	29	5	50	7	35
I-2 Helped include pop ed in state or EE Plans or frameworks	12	16	3	30	3	15
I-3 Applied for funds for pop ed	7	9	1	10	1	5
I-4b Offered env. or pop. org. to educ. as a resource	11	14	2	20	5	25
I-5 Community ed about pop ed	10	13	2	20	5	25

With respect to "Other Population Activities," the Responders again tended to surpass the original sample. The Non-responders reported levels either similar to or greater than those of the original sample.

Discussion

Inspection of the five tables shown above reveals a general trend. In most cases the Responders far exceed the original sample in reported level of population education activity. While there are several possible explanations for this, the most plausible (in our opinion) relates to the small sample size on which the percentages are based. For example, a percentage of 50% reflects the responses of only five people. Still, overall results are consistent enough to suggest that the "social desirability" dynamic we hypothesized was not operating--or at least it is not reflected in this study as designed.

The Non-responder group based on a larger sample size, shows activity levels closer to those of the original sample. In most cases, the levels are either very similar or else greater in the Non-responders sample than in the original. Again, the data do not support the hypothesis or biased reporting in favor of those doing greater levels of population education.

The results of this study add credence to the findings of the original evaluation: the workshop model is successful in terms of concrete spin-off activities reported by participants.

Chapter VII: Was It Worth It? Conclusions

The findings from the project evaluation suggest that the model--described in Chapter III--is a valid one. A large number of participants have indeed utilized their professional roles to help institutionalize population education. These educators have devoted many hours to population education and they have reached a large number of other people in a large variety of ways.

The findings reinforce the idea that the identification of key people in the education system who had the power to effect change was essential. The forming of a coalition of these key people who represented various and separate educational and volunteer entitites was also of extreme importance, as no one entity could effect change independent of the others.

Another common element--and a crucial one--was the power of the individual. A liason of key people is necessary but not sufficient for change. Ultimately it is the characteristics of the individuals involved who move ideas from the theoretical to the practical stage. Luckily, the Zero Population Growth population education project found individuals to work with whose leadership, enthusiasm, intelligence, dedication and persistence were the factors most responsible for success.

The workshops were not without their problems. Holding the workshops on school days often meant spending more money for teachers' substitutes; nonetheless school days were considered more desirable than weekends by teachers. There were a few major problems--the last-minute cancellation of one workshop, and a bewildering interpersonal conflict which threatened to sabotage another. There were invitations sent out so late that they required supplementary invitations by phone. There were invited speakers who exceeded their time on the agenda to an awkward degree. There were logistic "snafus"--the misplaced extension cord, distracting outside noise, and an almost indigestible "banquet" at a local Howard Johnson's. These troubles are to be expected in every large-scale venture and without exception were accepted with indulgence and humor by the participants. The benefits far outweighed the flaws.

Among the outcomes shared by all workshop participants that made the project "worth it" were:

A. Direct experience with background information, audio-visual materials, games, riddles, simulations and actual lesson plans for population education.

B. Access to information necessary to develop one's own program in population education. This included listings of texts, resource materials for teachers and students, curriculum units, films, slide/tape programs, filmstrips, charts and bulletin board material. It also included information about human resources for population education--population organizations, university and other study centers, the Census Bureau, and population and environmental publications. A population education leader's kit was later produced and made available to participants.

C. Liaison with local population education resources. Participants met and worked with representatives of school systems, universities, the state department of education, and environmental and population groups within their states. Often funding sources were identified for local projects. It must be noted that the extent and quality of local support for population education varied considerably. Workshop participants often turned to the ZPG project staff rather than to local resource groups.

D. Identification of the needs of educators for implementation of population education and the ways in which each participant could "do something." Questionnaires on these topics provided valuable information on the needs of educators. With slight variations by state, participants identified the need for usable materials, teacher-training, and charts, background information and audiovisual aids as their chief needs. Most participants indicated that they could help by using directly the methods and materials of the workshop and/or by organizing a teacher-training workshop or presentation to implement population education in their own "bailiwicks."

These questionnaires (see Appendix M) have been helpful to the ZPG staff in designing the revised population education teacher's packet. The data also reinforce findings from a national survey of teachers and thus will be helpful in the design of other population education projects.

E. Follow-up contact, such as a subscription to Interchange, the Population Reference Bureau's free bimonthly population education newsletter. Interchange features a lead essay on a population topic, classroom population materials and teacher-training opportunities. Participants were offered a $5 teacher membership in the Population Reference Bureau, which brings all of the Bureau's excellent publications, and a discount membership in Zero Population Growth, whose monthly newsletter contains a column, Tips for Teachers. In addition, a progress report, notice (and samples) of new materials, and advice on writing proposals and finding sources of funding were follow-up activities from Zero Population Growth.

F. Priority access to the 26 films on population and environ-

ment provided to the Zero Population Growth Population Education Project by the Office of Population Affairs (HEW).

G. Help with "spinoff" activities (classroom or teacher-training).

The conclusion that the ZPG Population Education Project was a worthwhile and productive venture is supported by the participants' reports of their subsequent activities. To the project leaders, the best evidence that the project was worthwhile came from the enthusiastic comments of the participants at the workshops and the letters of support from cosponsors when ZPG was seeking funding to continue the project (Appendix K). This support was instrumental in assuring the project's survival.

Chapter VIII: Current Progress: The Pop Ed Project Lives!

One of the purposes of the U.S. Office of Environmental Education grant program is to give initial--but not continued--support to promising projects. The rationale, and hope, is that worthwhile projects will attract other funding to permit the project to continue. Not all worthwhile projects do find other sources of support, however. The ZPG Population Education Project has been fortunate to find the funding necessary not only to continue but to expand its population education services with the addition of a third staff member.

In the second year of the project (July 1, 1976-June 30, 1977), ZPG led population workshops in Colorado, Michigan, Iowa, New York, Pennsylvania and Maryland (four follow-up workshops). As in the previous year, the project leaders were cosponsors of population education seminars at education meetings. These annual meetings included the National Council for the Social Studies, National Association of Biology Teachers, the National Science Teachers Association, the Maryland Association of Science Teachers, the American Psychiatric Association, and the World Population Society. Talks on population education were given at the University of North Carolina, University of Chicago, Columbia University, and the University of Maryland and articles on population were published in education journals. In addition, the Population Education Resource Kit was revised to meet better the needs participants identified at the workshops and a leader's kit was developed.

Funding for a third year means that the ZPG project can continue its population education services to teachers and other educators. At this writing, full-day workshops have already been held as part of a Global Education in-service course in Farmington, Michigan, and in Boston. Two workshops are scheduled for Virginia in January. Other workshops on the calendar include California, Indiana, and New Mexico. An OEE mini-grant also permitted the training in population education of 26 grassroots community leaders and educators from across the country, who came to Washington, D.C. November 11-12; each team of leaders plans to lead a population education workshop "back home" with all materials supplied by ZPG. In this third year, as before, the population education staff will also lead pop ed sessions at professional meetings such as the National Council for the Social Studies, the National Science Teachers Association and American Association for the Advancement of Science.

The leaders of the ZPG Population Education Project are grateful to the U.S. OEE for giving it its first financial and philosophic support. We are grateful to the other funders who generously funded the project, thus permitting it to grow and

flourish. We are also in debt to the cosponsors and participants of our workshops whose cooperative spirits and enthusiasm "funded" us in an equally rewarding way. The Pop Ed Project Lives!

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APPENDIX

CALENDAR Riddle

At the current rate of growth, about 2%, the world's population will double approximately every 35 years. Doubling a small number over and over soon means we are doubling ever larger numbers. 1977's 4 billion will double to 8 billion in the year 2012 if current growth patterns continue. This riddle helps to illustrate the concept of exponential growth (an increase at a constant rate per year or other unit of time) and its implications for problem-solving in the future.

* * *

A father complained that his son's allowance of $5 per week was too much. The son replied, "Okay, Dad. How about this? You give me a penny for the first day of the month, 2¢ for the next, 4¢ for the next, 8¢ for the next, and so on for every day of the month." The father, thinking he had a foolish son, readily consented.

Which, indeed, was the more clever? (See reverse side of page.)

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

A

The son's allowance

Day 1	.01
Day 2	.02
Day 3	.04
Day 4	.08
Day 5	.16
Day 6	.32
Day 7	.64
Day 8	1.28
Day 9	2.56
Day 10	5.12
Day 11	10.24
Day 12	20.48
Day 13	40.96
Day 14	81.92
Day 15	163.84
Day 16	327.68
Day 17	655.36
Day 18	1,310.72
Day 19	2.621.44
Day 20	5,242.88
Day 21	10,485.76
Day 22	20,971.52
Day 23	41,943.04
Day 24	83,886.08
Day 25	167,772.16
Day 26	335,544.32
Day 27	671,088.64
Day 28	1,342,177.28
Day 29	2,684,354.56
Day 30	5,368,709.12
Day 31	$10,737,418.24

Those Billions are Individuals!

1. Draw a line lengthwise down a sheet of paper.
2. On the left side, list the basic needs of every human being: water, food, clothing, shelter, etc.
3. On the right, list the things you need or want for your own lifestyle: color-TV, stereo, car, hot water, McDonald's hamburgers, etc. Next to each item, name some of the resources or products needed to support these things: oil, electricity, iron, pesticides, grain, water.
4. Cross off 3 of the items on the right side so that people who lack the basic necessities on the left side can have them.
5. Cross off 3 more, since continued population growth and development will mean giving up such levels of consumption.
6. How many more items, if any, are you willing to cross off your list to sustain population growth as well as rising consumption in the U.S. and the rest of the world?
7. What values, if any, are in conflict?

Basic Necessities	My Needs or Wants
food	stereo (wood, oil, electricity)
water	T.V. (metal, oil, electricity, glass)
clothing	McDonald's hamburger (grain, pesticide, fertilizer, oil, wood)
shelter	hot water (water, oil or gas, copper, lead iron)
...	baggies (water, oil, wood)
...	
...	

MORE POPULATION EXERCISES*

1. One-third of the Earth's surface is land.
   People live on one-half of the land.
   People live on what fraction of the Earth's surface?

2. People often confuse the size of the percentage with the absolute amount. In other words, 3% of something is not larger than 1% of something else if the base of the latter percentage is sufficiently greater. The following exercise is an example.

   The population of the U.S. grew by 3.6% in 1860. (Pop.=30 million in 1860.)
   The population of the U.S. grew by 1.7% in 1965. (Pop.=200 million in 1965.)
   Can you tell in which year more people were added to the population?

   What number of people were added in 1860? In 1965?

3. Napoleon has saved $5.94. He is going to buy 6 presents--for his mother, father, and four sisters. Each present costs the same. How much does he spend on each present?

   Do the same, only pretend that Napoleon has a mother, father, and only one sister. If Napoleon still spent $0.99 on each present, how much would he have left over?

4. 140 million tons of pollutants are put into the atmosphere each year in the U.S. There are about 200 million people in the U.S. (1970 census). How many tons is this per person? How many pounds?

5. Density of population is the number of people living in a unit area. If 100 people live in 10 square miles, how many live in one square mile (on the average)?

   New York City has a population of about 8 million people who live on 300 square miles. What is the population density per square mile in New York?

6. Sophostan has $2,000 to spend on books for school children. If there are 400 children, how much can be spent for each child?

   If there are 800 children, how much can be spent for each child?

*Adapted from Kathy Shordt, Modern Mathematics Exercises in Population Dynamics, September 1972.

Answers on reverse side.

Answers to What is a Billion? Activity 1: c. over 95 years
Activity 2: a. days--1,000; years--2 & 3/4
b. days--1 million; years--2,739.7
c. 763 (rounding off) in 1977;
762 in 1978, etc.

A

WHAT IS A BILLION?

World population today (1977) is slightly more than 4 billion people. Is that a little or a lot? This exercise will help you appreciate how much one billion is. Because we are really talking about people and not dollars, it may help to consider the needs and hopes of human beings as well as the impact on society and the environment of 4 billion people.

1. Your rich uncle has just died and has left you $1 billion. But if you accept the money you must count it for eight hours a day at the rate of $1 per second. When you are finished counting, the $1 billion is yours and then you may start to spend it.

   a. Do you accept your uncle's offer? _____

   b. Why or why not? _____

   _____

   c. How many years will it take to count the money? _____

   Work Space:

2. a. How long would it take you to spend $1 million at the rate of $1,000 per day?

   Days: _____ Years: _____

   b. How long would it take to spend $1 billion at the same rate?

   Days: _____ Years: _____

   c. If you started spending the $1 billion in the year 1 A.D., how many more years would you be spending it?

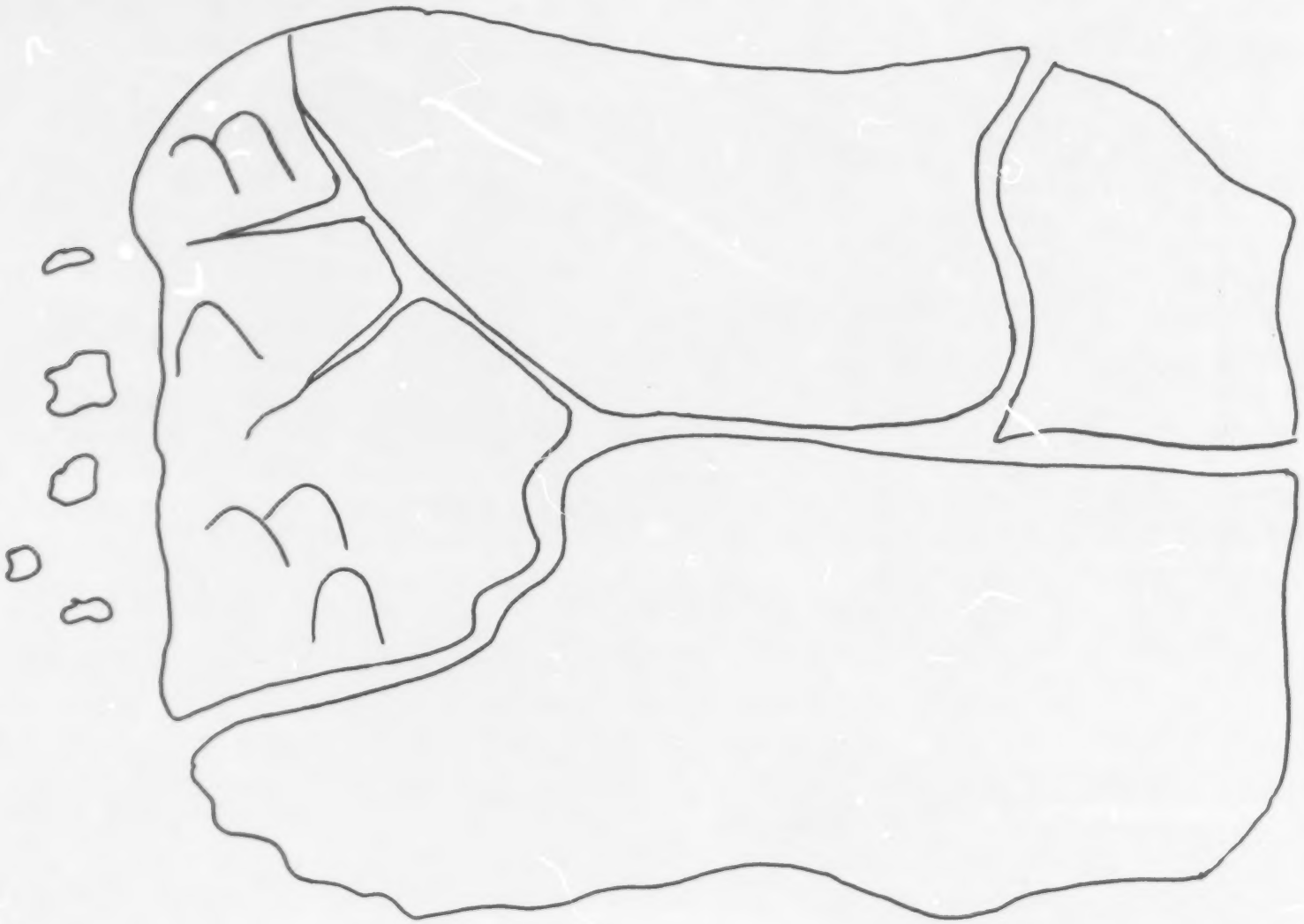
   Years? _____

   Work Space:

Answers to these exercises are on the reverse side.

Answers to More Population Exercises: 1. 1/6 2. Yes, if you know that the population was slightly over 30 million in 1860 vs. 200 million in 1965. For this reason, absolute increase is much greater in 1965, although the percentage of increase is smaller; 1,080,000; 3,400,000 3. $0.99; $2.97 4. .70 [illegible] or 1,400 lbs 5. 10 people; 26,667 6. $5.00; $2.50.

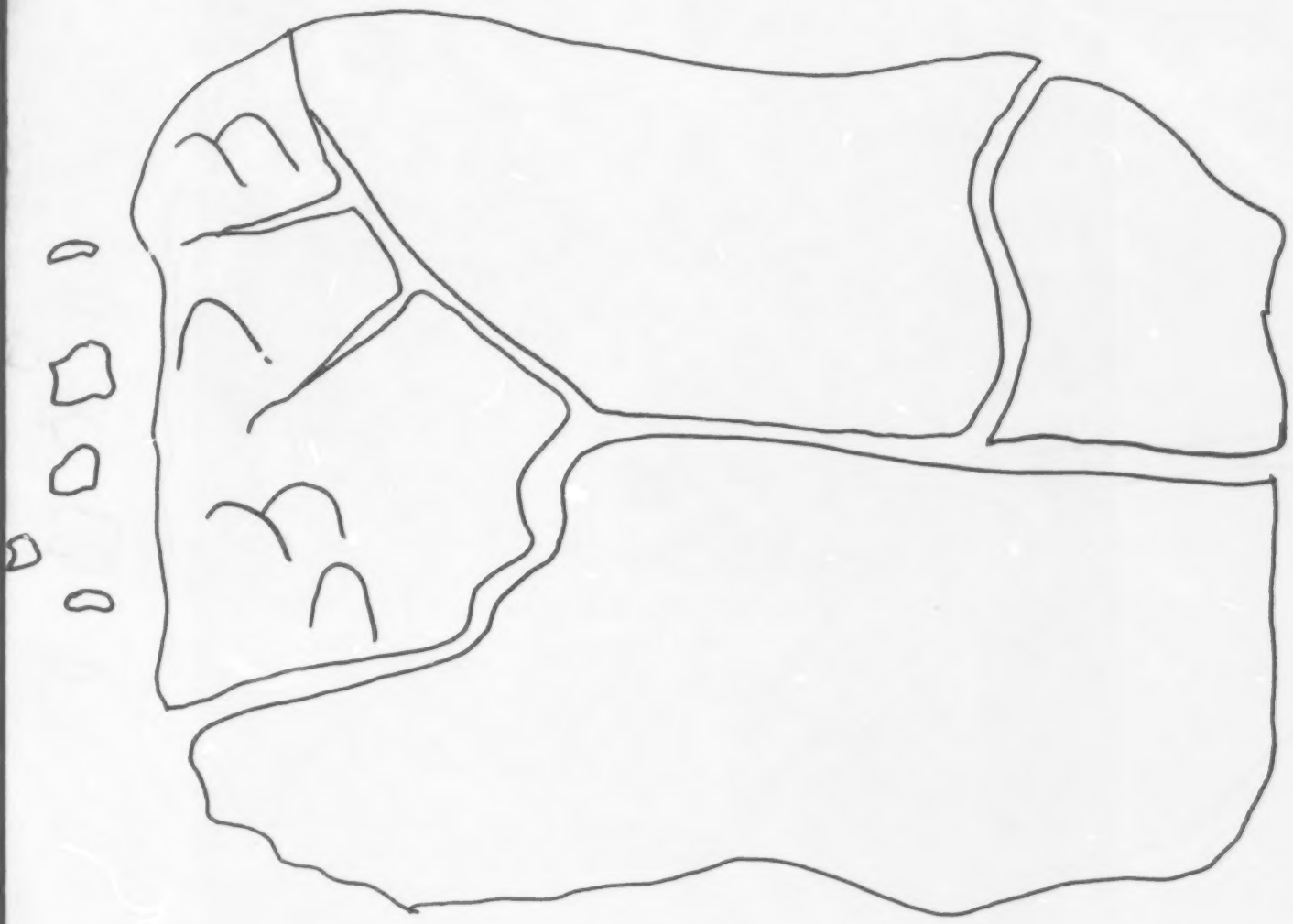
I. Some 200 years ago 100 men, women and children were shipwrecked on an island which had abundant natural resources. Some domestic animals and tools also survived the wreck. Draw your idea of how the island looked 200 years after the shipwreck. What are your assumptions about population change, technology and government on this island?



-over-

Taken from Unit IV (BP923) of Man and Nature, Biological Sciences Curriculum Study, available from Crystal Productions, Airport Business Center, Box 11480, Aspen, CO 81611, (303)925-8160; $40.00.

II. Draw your idea of how the island will look 200 years from today. What could change your prediction?



BRINGING THE REAL WORLD INTO THE CLASSROOM:

THE CALL FOR POPULATION EDUCATION

By Elaine M. Murphy

> "The rate of growth that currently characterizes the human population as a whole is a temporary deviation from the annual growth rates that prevailed during most of man's history and must prevail again in the future. Today's situation is unique in mankind's experience: the highest growth rate in human history (about 2 percent per year) from the highest base in absolute numbers (nearly four billion) . . . In the 1970's the rate of increase has slightly exceeded 2 percent per year. That means a doubling time of less than 35 years, and the number currently being doubled is a very large one. Projection of such growth for very long into the future produces a world population larger than the most optimistic estimates of the planet's carrying capacity. In the long run near-zero growth will have to be restored — either by lower birth rates or by higher death rates."1

So begins the September, 1974 special issue of *The Scientific American* on "The Human Population". When transferred to the classroom, inquiry and discussion about the human population describe the process of population education. Students examine among other topics: the dynamics of population change; varying worldwide patterns of growth, decline, stabilization and urbanization; changes in a nation's age structure; and trends in fertility, mortality and family formation. They consider the implications of such trends for the individual, the family, the nation, the world and the ecosystem. Students identify problems based on sound data and debate solutions.

Population education operates on a separate, distinct level from sex education; it does not consider reproductive anatomy or birth control techniques. Rather, the student examines the relationship of population trends to food and energy supplies, environmental problems, social conditions and other issues of concern. The interdisciplinary nature of population education makes it ideal for special courses, but it is most often integrated where relevant into separate disciplines — biology, social studies, humanities and other areas. The goal of population education, as in other kinds of education, is enlightenment, which forms the basis for personal and political decision-making.

Bringing "the real world" into the classroom has been at the heart of educational change over the past decade. Perhaps no other topic touches the lives of students — present and future — as much as population. For example, the direct impact of the post World War II "Baby Boom" on today's jobs and housing, and the contribution of population growth to energy and resource shortages; to pollution, crowding, traffic and noise; to suburban sprawl; and the diminishment of wildlife and open space — these problems impinge upon the daily lives of students.

THE CALL FOR POPULATION EDUCATION

Recognizing the importance of population education, various groups have called for its inclusion in the curriculum. At the United Nations-sponsored World Population Conference in 1974, 81 nations signed the World Plan of Action, which includes a recommendation for population education. Similarly, the President's Commission on Population and the American Future recommended the passage of a Population Education Act to make funds available for teacher

Continued, next page.

Elaine M. Murphy is Population Education Director of Zero Population Growth, Inc., based in Washington, D.C. See page 12 for Ms. Murphy's guidelines for environmental film reviewing.

B

POPULATION EDUCATION, *from preceding page.*

training, materials and research.[2] Various state governments have acted on their own, mandating the development of teaching materials on population, including Washington State and New York. Florida, New Jersey, Delaware, and many other states have developed and distributed population materials in conjunction with their environmental education programs, often funded by the U.S. Office of Environmental Education. Some local school systems and resourceful individual teachers have developed their own teaching units. In one large urban system, the Baltimore City Public Schools, population education has become a required part of the curriculum at every age level.

Efforts at teacher training and distribution and development of materials have been greatly aided by private, non-profit groups such as the Population Reference Bureau (PRB), the Sierra Club and Zero Population Growth, Inc. (ZPG). For example, a grant to ZPG, Inc. from the U.S. Office of Environmental Education for state-wide training workshops on population education has led to "spin-off" workshops, curriculum writing and classroom implementation in each of five model states. Many college and universities have also become actively engaged in population education.

THE PROFESSION'S RESPONSE

Education associations have demonstrated leadership in encouraging the inclusion of population education in the schools. The National Education Association, for example, has passed two resolutions to that effect and has sponsored teacher workshops and resource materials on population. The American Home Economics Association is engaged in teacher training and material development in population education. Among the groups holding special sessions on population education at their annual meetings are: the National Council for the Social Studies, the National Science Teachers Association, the National Association of Biology Teachers, the National Catholic Education Association, the American Association of Colleges of Teacher Education, American Association of Secondary School Principals, the Association of Curriculum Developers and Supervisors, and the American Association for the Advancement of Science. These groups have also featured population education in their national publications, sometimes devoting an entire issue to this topic.[3] In addition, groups like the National Science Foundation and the United Nations Fund for Population Activities have, respectively, supported teacher training and materials distribution.

IN THE CLASSROOM

With all this high-level support, has population education made its way to its intended consumer, the student? A survey of a national sample of high school teachers reveals that 47% of those queried are teaching about population. Considering the newness of the field, that is encouraging. However, 32% of these teachers deal with population for less than five hours; 67% for less than 10 hours; 85% for less than 20 hours. For a concern that some experts have called the most pressing problem facing mankind,[4] some might find the coverage inadequate. Moreover, although 72% of the population teachers indicated that personal concern was a primary influence in their teaching, 62% of them indicated that the inclusion of population topics in a textbook they were using was also a primary influence. An earlier study has indicated the inadequacy of most texts in terms of amount and accuracy of coverage.[5]

Those teaching about population indicated certain factors that were either somewhat of a problem or a substantial problem: lack of time, lack of training, lack of and costs of materials and difficulty of fitting population in their curriculum. Those who were not teaching population identified these same factors as problems with curriculum fit and lack of time leading the list.

Questionnaires filled out by teachers and administrators at PRB or ZPG workshops were posed in terms of needs of educators to help them implement population education. The chief needs identified were materials and teacher training opportunities, both pre-service and in-service. What seems clear is that if this important topic is to be covered adequately, a systematic approach is needed. This will include a tremendous increase in undergraduate courses on population education in colleges of education, a similar increase in in-service courses and workshops, adequate coverage in textbooks, increased availability of supplementary materials including audiovisual aids, and research on methods and outcome of population education. Support will have to come from both private and governmental sources of funding. Perhaps most important of all is the need for deliberate structuring of a population unit into a teacher's planning for a course in concert with the guidance of department heads and supervisors of relevant discipline areas.

Students will be the chief beneficiaries of these educational efforts as they gain knowledge and insight into the population problems of the real world that they will inherit. Pollution and depletion of natural resources (both related to population) ranked first and overpopulation second as the most serious world problems in a survey of American youth conducted by the Overseas Development Council.[6] In the 1973 National Assessment of Education Progress, "overpopulation" was identified by 13- and 17-year-olds and young adults (26-35) as a problem second only to pollution.[7] A 1976 study by the Educational Development Center of Cambridge, Massachusetts, reveals that 7th, 9th, and 11th graders in urban, rural, and suburban settings view the future as dominated by violence, pollution and overpopulation.[8] Such problems, while serious, are still solvable, but solutions depend on the decisions that an informed citizenry will make. Population education is one contribution to problem-solving for the future.

REFERENCES

[1] "The Human Population," *Scientific American*, September, 1974, Vol. 231, No. 3.

[2] *Population and the American Future* (The Report of the Commission on Population Growth and the American Future), New York: New American Library, 1972.

[3] Viederman, Stephen (guest ed.) "Population Education," special issue of *Social Education*, Vol. 36, No. 4 Washington, D.C.: National Council for the Social Studies, April, 1972.

[4] Gustavus, S. and Huether, C. "Population Education: A Status Report" in progress.

[5] Kwitman, Lois. The Journal of Environmental Education Vol. 5, No. 4, Summer, 1974.

[6] Overseas Development Council and U.S. Coalition for Development. Fall, 1972.

[7] National Assessment of Educational Progress, National Center for Educational Statistics (HEW), 1973.

[8] "A Study of Secondary School Curricula and Student Views on 'Growth Implications and the Earth's Future'" Educational Development Center, Cambridge, Mass., 1976.

Budget: July 1, 1975 - June 30, 1976

U.S. Office of Environmental Education Grant #GOO-7500692	$27,216
Sunnen Foundation Grant	15,000
	$42,216

Salaries

Grant Supervisor	$ 1,200
Project Director	13,750
Associate Director (3/4 time)	8,000
Assistants (temporary)	3,000
Fringe (10%)	2,595
	$28,545

Workshops and Associated Activities

Travel, participants	$ 2,000
Travel, staff	2,500
Food, participants	800
Materials	3,000
Telephone	1,000
Honoraria	550
Postage, printing and stationery	900
Miscellaneous	200
Revision of Teacher's Resource Packet	2,700
	$13,650

Disbursements

Salaries	$28,545
Expenses	13,650
Total	$42,195

Participants in Population Education Workshop

Tallahassee, Florida January 9-10, 1976

Name	Professional Position	Mailing Address & Daytime Phone
Allen, Carol E.	Leon Co. Humane Soc.	1603 Augusta [illegible], Tall., FL, 32303, (904)385-6559
Allen, Rod	Assoc. Prof., FSU	426 Hull Dr., FSU, Tall., FL, 32306, (904)644-5769
Baker, Dennis	Grad. Tchg. Assistant University of Florida	700 NW 53rd Terr., Gainesville, FL, 32607, (904)378-4101
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Barnett, Linda	Ass't. Dir., Center for Gov'tal. Responsibility	Holland Law Center, U of FL, Gainesville, FL 32611
Barrett, Andrea F.	Supervisor, 2ndary Instruc. Wakulla County Schools	PO Box [illegible], Crawfordville, FL, 32327, (904)926-3960
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Bonner, Gleney B.	Supervising Principal Wakulla County	PO Box 98, Crawfordville, FL, 32327 (904)926-7131
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Daniels, Chuck	Science Teacher Leon High School	602 Gunter St., Tall., FL, 32303 (904)222-2189
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Greene, Jim	Professor Tallah. Community College	PO Box 2792, Tall., FL, 32304 (904)576-5181, X274
Hammond, Bill	Coord. Sci. & Envir. Ed., Lee County Schools	2266 Second St., Ft. Myers, FL, 33901, (813)334-1983

Name	Professional Position	Mailing Address & Daytime Phone
Hopkins, Tom	Educational Coordina., FL Power & Light Co.	PO Box 013100, Miami, FL, 33101, (305)552-4070
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Jones, Alan L.	Social Science Teacher	2711 Allen Rd., (A-2), Tall., 32303 FL, (904)385-5138, -5139
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LaHart, David E.	Environmental Educator	Rt. 12, Box 978, Tall., FL, 32304, (904)877-2682, 644-5769
Lambert, Helen	Assist. Dir., Popula. Ed. Proj., Zero Popul. Growth	1346 Connecticut Ave., NW, Wash., DC, 20036, (202)785-0100
Lott, Jesse	Social Studies Teacher Leon High School	2317 Bocne Blvd., Tall., FL, 32303, (904)385-6240
Lumsden, Bob	Science Consultant Dept. of Education	109 W. Jefferson, Tall., FL, 32301, (904)488-5391
Markel, Eddie	Tchr.; Coordin. Env. Ed., St. John's County	3 Del Rio Dr., St. Augustine, FL, 32084, (904)824-1234
Massialas, Byron G.	Prof. of Educ.; Proj. Dir. Pop. Ed. Prog. for Teachers	FSU, 302 Educ., Tall., FL, 32306, (904)644-5038
Mausert, Patricia	Science Tchr., Chamberlain High School, Tampa	14301 Brentwood Dr., Tampa, Fl, 33618, (813)932-6141
McGriff, Jerry L.	Environ. Educ. Coordinator, Bradford Co. Schools	N. Temple Ave., Starke, FL. 32091, (904)964-6092
McMullen, Mel	Teacher, Howard Middle School	Box 368, Monticello, FL, 32344
Moore, James H.	Social Studies Superv., Escambia County	904 N. 57th Ave., Pensacola, FL, 32506, (904)456-7404
Moore, Jim	Educational Consultant, Florida Dept. of Educa.	Rm. 18, Miles Johnson Bldg., Tall., FL, 32301, (904)488-5391
Murphy, Elaine	Dir., Popula. Educa. Proj. Zero Population Growth	1346 Connecticut Ave., NW, Wash., DC, 20036, (202)785-0100
Nam, Charles B.	Dir., Center for the Study of Population, FSU	FSU, Tall., FL, 32306 (904)644-2833

Please turn the page

D

Name	Professional Position	Mailing Address & Daytime Phone
Perry, Belinda S.	Helping Teacher Environmental Educ. Center	2266 Second St., Ft. Myers, FL, 33901, (813)334-1983
Phillips. Jim	Envir. Ed. Coordinator, Area II, Flor. Dept. of Ed.	347 Miles Johnson Bldg., Tall., FL, 32304, (904)488-6547
Sanford, Chas.H.,Jr.	Ecology-Marine Biology Teacher	4409 W. Sligh Ave., Tampa, FL, 33614 OR 2308 W. Henry Ave., Tampa, FL, 33603 (813)886-1741
Sheppard, Chas. R.	Environmental Education Teacher	434 N. Tampa Ave., Orlando, FL, 32805, (813)628-0995
Stedman, Steve	Field Repres., Florida Audubon Society	PO Drawer 7, Maitland, FL, 32751, (305)647-2615
Stokley, Roger	Principal, Sopchoppy Elementary School	PO Box 68, Sopchoppy, FL, 32358 (904)962-2151
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Wright, Nelle	Consultant	FSU Education Building, Tall., FL, 32306

Population-Environment Studies Workshop for Educational Leaders

Tuesday, November 25, 1975
University of Delaware

Sponsors

Delaware Department of Public Instruction
Appoquinimink, New Castle-Gunning Bedford and Newark School Districts
College of Education, University of Delaware
Zero Population Growth
Population Reference Bureau

8:30	Registration		
9:00	Opening Remarks	-	Elaine Murphy Population Education Director Zero Population Growth

Workshop Speaker
Honorable Pierre S. duPont, IV, Congressman

	Introduction	-	George Kirk, Superintendent of Schools, Newark
10:00	Coffee		
10:30	"The Population Situation, a Teaching-Learning Activity"	-	Val Arnsdorf, College of Educ., U. of Delaware
11:00	"A Conceptual Framework"	-	Robert Stegner, College of Educ., U. of Delaware
11:20	"Science and Ethics of Population Control," a slide-tape presentation	-	Elaine Murphy
12:00	Open Forum: Population-Environment Studies and Existing School Programs	-	William Keene, Superintendent of Schools, Appoquinimink
12:30	Luncheon		
1:30	Demonstration Lessons	- -	Roberta Hopkins, Gauger Elmer Read, Central
2:30	Conclusions "Equinox"	-	John Reiher, Delaware Dept. of Public Instruction
	"In-Service Education"	-	Loren Thompson, Newark
	Workshop Evaluation	-	Elaine Murphy

ENVIRONMENT AND POPULATION

A Florida Workshop on

Population Education

and the

Environment

January 9, 1976

1:00 Registration

1:30 Welcome Elaine Murphy, ZPG
Population Quiz

1:45 Opening Remarks Art Marshall,
"Curves of Stress"

2:30 Panel Discussion
Leon Bouvier, Population Reference Bureau
Charles Nam, Florida State University
C. Richard Tillis, Dept. of Education
Byron Massialas, Florida State Univ.

3:15 Question and Answer

3:30 Coffee and Donuts

3:45 William Hammond, Lee Co. Envir. Ctr.,
"Existing Interdisciplinary Envir/ Popul. Programs and Materials"

4:45 Questionnaire

5:00 Play with a Population Education Computer,
Viv Klaff, University of Illinois

6:00 Cash Bar, The Southernaire

7:00 Dinner, Howard Johnson's (next door)

8:30 Fantastic Film Festival

January 10, 1976

9:00 Teacher-designed population materials.
Charles Daniels, Leon H.S.,
Jessie Lott Leon County

9:45 Population Games
Calendar, 2 vs 3-child family, global geography, what is a billion?

10:45 Coffee and Donuts

11:00 Small Group Discussion

12:00 Lunch (Howard Johnson's)

1:00 Distribution and explanation of population education materials

1:30 Workshop evaluation

1:45 Concluding remarks
Elaine Murphy
C. Richard Tillis

* * * * * *

Our thanks to the Population Education Workshop guests, both the participants and the program speakers, who have come from all parts of Florida as well as from

(over, please)

E

out-of-state to explore the relationship of population to the well-being of our planet. Special commendation goes to C. Richard Tillis and the Office of Environmental Education whose mini-grant system will make available up to $10,000 to those Florida school districts wishing to develop population education programs.

* * * *

This workshop is funded by a grant from the Department of Health, Education and Welfare's Office of Environmental Education.

It is co-sponsored by:

Florida Department of Education
Office of Environmental Education
Tallahassee, Florida 32304

Florida State University
Science and Human Affairs Program
Tallahassee, Florida 32306

Population Reference Bureau, Inc.
1754 N Street, N.W.
Washington, D.C. 20036

Zero Population Growth, Inc.
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

ENVIRONMENT and POPULATION

A Florida Workshop on Population Education and the Environment

January 9 and 10, 1976
Tallahassee, Florida

Population Education Conference

Grove City, Ohio February 20 and 21, 1976

Friday

9:30 - 10:00	Donuts, coffee, and get acquainted
10:00 - 10:15	Who's Who - John Hug and Elaine Murphy
10:15 - 11:30	Population: Facts and Some Materials for the Classroom - Carl A. Huether
11:30 - 11:50	Hands on activities - Elaine Murphy, Helen Lambert
11:50 - 12:15	Filmstrip: Science and Ethics of Population Control. - Elaine Murphy, Helen Lambert
12:30 - 1:30	Lunch (to be served at 12:45)
1:30 - 3:15	Values Clarification - Environment and Population Ethics - Judy Schultz (Film: Tradedy of the Commons to be shown during this time).
3:15 - 3:30	Break
3:30 - 4:45	Demonstration of Population Education Implementation Millie Bohn, John Mase
4:45 - 5:00	Summary Discussion - Mary Friend Adams
5:00 - 5:30	Register at Motel
5:30 - 6:30	Getting Acquainted at Conference Center (Cash Bar)
6:30 - 7:30	Dinner
8:00 - 8:15	The Needs for and of Population Education - Carl A. Huether
8:15 - 9:30	Population Education Cinema 1. Population Ecology 2. Women and Population 3. Population and the American Future

Saturday

Breakfast on your own

9:15 - 10:00	Materials available for Population Education - Mary Friend Adams
10:00 - 10:30	Hands-on Activities - Elaine Murphy, Helen Lambert
10:30 - 10:45	Break

OVER

10:45 - 11:30	Population Education Implementation through pre-service and in-service Teacher training. Infusion with new Ohio certification requirements - Mary Friend Adams
11:30 - 12:00	Global simulation game - Elaine Murphy, Helen Lambert, Ed Turanchik
12:00 - 1:00	Lunch
1:00 - 2:00	Road Blocks and End Runs - John Hug
2:00 - 3:00	Wrap Up and Evaluation - John Hug

This conference is sponsored by:

The Ohio Department of Education

The University of Cincinnati

Zero Population Growth, Inc.

Agenda

Population Education Workshop

Bergen County, New Jersey

May 25, 1976

8:45 Welcome

9:00 World and National Population Trends
Elaine Murphy, Zero Population Growth (ZPG)
--Quiz
--"World Population" Film (address on reverse)

9:20 Population Games and Riddles
Judith Seltzer and Carol Fletcher, Population Reference Bureau, Inc. (PRB); Elaine Murphy and Helen Lambert, ZPG.
--Calendar; "What is a Billion?;" water game; "human beans;" Food for Thought (address on back); 2- vs. 3-child family.

10:10 Coffee Break

10:20 Population Highlights in NJ and Bergen County, Judith Seltzer

10:45 Population Education Resources in New Jersey: Computer-Based Resource Units (CBRU).
Edward Ambry, William Harding, Edna Doll, New Jersey State Council for Environmental Education.

11:30 Film Discussion: Critical Viewing and Thinking
--film: "Tomorrow's Children," available free from the N.J. State Council for Environmental Education (address on reverse)

12:30 Lunch

1:30 How Can Population Topics Enhance my Classroom?
Classroom Ideas and Strategies. Helen Lambert, ZPG

2:15 Questions and Answers

2:30 Classroom Materials on Population: What's Available? What's Excellent? Judith Seltzer, PRB

3:00 Human Potential Activities: Writing and Drawing One's Feelings. Carol Fletcher, PRB

3:20 Questionnaire Evaluation and Conclusion

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Cooperative agencies and their addresses are listed on the reverse

AN ENVIRONMENTAL EXPERIENCE

held at the Science Teaching Center, College of Education, University of Maryland, 2 June 1976

9:15 - 9:45	Registration - Room 0114, College of Education, UMCP Coffee and Donuts
9:45 - 10:00	Welcome Dr. Jack Wheatley - Science Teaching Center, UMCP Dr. Jean Grambs - Division of Human and Community Resources, UMCP Dr. Jim Latham - Science Consultant, Maryland State Department of Education
10:00 - 10:30	Global Geography - Simulation Ms. Carol Fletcher, Population Reference Bureau, Washington, D.C.
10:30 - 12:00	Session A - Population and Food Ms. Elaine Murphy and Ms. Helen Lambert Zero Population Growth, Washington, D.C.
	Session B - Energy and Resources Dr. John Fowler - National Science Teachers Association, Washington, D.C. Dr. Emmett Wright - Science Teaching Center, UMCP
12:00 - 12:30	Lunch - Room 0223
	Materials Display - Room 0220
12:30 - 2:00	Repeat of Session A and Session B - Room 0114
2:00 - 2:30	Human Potential - Stimulation Dr. Jack Wheatley - Science Teaching Center, UMCP
2:30	Materials Display - Room 0220
	Discussions with Participants

F

When answering questions about the impact of the ZPG workshops or project, any directly related activities -- e.g. follow-up mailings, consultation or provision of materials -- should also be included in your assessment.

A. Please circle only ONE number to indicate your PRIMARY role relevant to population education:

1. instructor or professor, college of education
2. college instructor or professor, other discipline
3. elementary teacher
4. senior high school teacher
5. junior high school teacher
6. principal
7. department head
8. program administrator (supervisor, coordinator) at the state level
9. program administrator (supervisor, coordinator) at the regional, district or county level
10. consultant, curriculum developer, or other professional who advises teachers
11. staff member of an environmental education center
12. volunteer or staff member of a population or environmental organization
13. other (please specify)_____
14. Write number(s) from list above representing any additional roles_____

B. (For school system personnel only)
My primary subject area is: (circle only one)

1. social studies
2. biology
3. general or other science
4. humanities
5. environmental education
6. other (please specify)_____

In Items C and D, please circle the response which best describes your feeling. SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, and DK or N = Don't Know or Neutral.

C. Following the workshop or project and, in part, as a result of my participation in it:

1. I feel I know a lot more about population issues.	SA	A	D	SD	DK or N
2. I feel population education in the schools is less practical or feasible.	SA	A	D	SD	DK or N
3. I want to do what I can to promote the teaching of population in the schools.	SA	A	D	SD	DK or N
4. I feel that population issues are even less important.	SA	A	D	SD	DK or N

D. Following the workshop or project and, in part, as a result of my participation in it:

1. I feel that, in general, the games and demonstrations illustrated at the workshop are easily usable by most teachers.	SA	A	D	SD	DK or N
2. I feel that, in general, the games and demonstrations are of little educational value to students.	SA	A	D	SD	DK or N
3. I feel that the follow-up mailings have been quite helpful.	SA	A	D	SD	DK or N
4. I feel that supporters of population education haven't the right to expect very much from the schools.	SA	A	D	SD	DK or N
5. It is a good idea to have a mixture of roles represented among workshop participants (i.e., inclusion of teachers, administrators, volunteers, etc.) rather than teachers alone, supervisors alone, etc.	SA	A	D	SD	DK or N
6. I prefer to have only one discipline represented among workshop participants, i.e., only science, or only social studies, etc.	SA	A	D	SD	DK or N

E. My single strongest motivation for attending the workshop was: (circle only ONE)

1. my interest in learning of new techniques and materials for population education
2. the encouragement of my superior(s) or school system
3. curiosity about this topic
4. acquiring graduate or salary credit
5. no identifiable reason
6. other (please specify)_____

Items F through J are relevant variously to teachers, supervisors, and other categories, but there is considerable overlap since one person often "wears several hats." Please circle <u>all</u> activities that apply to you, regardless of your primary role.

F. Following the workshop or project and, in part, due to my participation in it, I have: (circle one or more)

1. read some or all of the materials obtained through the workshop or follow-up mailings
2. used workshop materials, but in not more than 1 or 2 presentations
3. invited a population speaker to my class
4. served as a visiting class speaker on population
5. incorporated another class or teacher into my own classroom population education activity
6. taught a mini-course (trimester, semester or quarter) on population for students
7. showed a film or other audiovisual program on population in the classroom

G. Following the workshop or project and, in part, due to my participation in it, I have: (circle one or more)

1. infused a population unit (of approximately 3 hours or more in duration) as a structured part of my course(s)
2. engaged in population curriculum writing for use by (please check) __a school; __a system; __state; __nation
3. directed or encouraged the teachers I supervise or advise to teach about population
4. included (or intend to include) adequacy of the coverage of population topics in my choice of textbooks (or in the textbooks of those I supervise or advise)
5. attended additional workshops or courses which included a focus on population education
6. organized or initiated an inservice workshop, session, or course for teachers and/or supervisors.
   Was this course/workshop held? __yes __no If yes, how many attended?___ If no, please explain_____
   _____
7. suggested the inclusion or expansion of population education to my department head or supervisor
8. devoted part of a faculty meeting to encouragement of population education

H. Following the workshop or project and, in part, due to my participation in it, I have: (circle one or more)

1. shared ideas on population education with teachers or with school librarian
2. started a collection of resources which focus on or include population materials. Whom does this collection serve?_____
   _____
   _____
3. disseminated population teaching materials or resource lists to teachers, schools or school libraries or included population resources in other such lists
4. publicized population education materials through newsletter with circulation that is (please check) __for individual school; __for county, region, or school system; __statewide; __nationwide; or other (please specify)_____
5. purchased or sent for free teaching materials for use in (please check) __a class; __a school; __a school system; __for my organization, or other (please specify)_____
   Please list any material you have purchased or sent for:

Title	Number Ordered	Cost

(continue on last page if necessary)

F

I. Following the workshop or project and, in part, due to my participation in it, I have: (circle one or more)

1. purchased, rented or borrowed audiovisual materials. Please list:

Title	Source	Cost

(continue on last page if necessary)

2. helped to include population education in state or regional environmental education plans or frameworks. Please explain briefly:

_____

_____

3. applied for funds for population education. From whom did you seek these funds?_____ Amount obtained_____

4. offered the environmental or population organization to which I belong as a population education resource to educators. Please specify_____

5. engaged in community education about population (please specify organization worked with and activity)_____

_____

(continue on last page if necessary)

J. Following the workshop or project and, in part, due to my participation in it, I have: (circle one or more)

1. introduced population education into the environmental/population organization of which I am a member. Please specify organization and activity_____
2. joined or renewed my membership in a population or environmental organization. Which one(s)_____
3. contributed money (exclusive of dues in above item) to a population or environmental organization. Which one(s)?_____ Amount donated_____

K. Following the workshop or project and, in part, due to my participation in it, I have reached this number of people through my population education activities (please estimate approximate number):

___students
___teachers
___others (specify type of organization or other context)_____

_____

L. Following the workshop or project and, in part, due to my participation in it, I would estimate that I have:

spent ___(indicate number) hours on population education in my classroom

spent a total of ___(indicate number) hours on population education activities (i.e. volunteer work, reading, organizing and presenting workshops, preparing for and teaching classes, etc.)

M. The population education workshop or project was helpful chiefly in providing: (circle only ONE)

1. directly useful materials and teaching ideas
2. background information on population trends
3. knowledge about and lists of written and audiovisual materials and organizations
4. contact with resource people and groups in my area
5. motivation to encourage/teach population education
6. all of the above in fairly equal proportions
7. The workshop and project did not contribute to any (or any increased) population education on my part.
8. The workshop and project were counterproductive.

N. If you were able to engage in no (or almost no) population education activities following the workshop or project, please indicate the MOST IMPORTANT REASON below: (circle only ONE)

1. difficulty in deciding how it fits in my topic
2. lack of money for materials
3. lack of knowledge about materials
4. lack of background in population
5. lack of time for preparation
6. lack of time in my class
7. lack of encouragement by school or school system administrators
8. student resistance
9. community resistance or fear of it (underline which)
10. resistance of the teachers I supervise or advise
11. administrators' resistance or fear of it (underline which)
12. my own lack of interest
13. other (please specify)_____

Of the items above, list the numbers of the 2nd and 3rd most important reasons:___ ___

O. In teaching about population, what do you feel are the most important issues?_____

_____

P. What values, if any, should be dealt with?_____

_____

O. (Florida participants only) Please check as appropriate.

I have applied for___and received___ a minigrant from the Florida Office of Environmental Education for population education curriculum writing and/or teacher training.

R. (New Jersey participants only) Please check as appropriate.

--I have___, have not___used the CBRU (Computer Based Resource Unit) on population in my class. If not, please explain_____

_____

--I have___, have not___utilized the population education services of Planned Parenthood.

S. Interchange, the Population Reference Bureau's population education newsletter, is most useful because of its: (circle only ONE)

1. lead essay
2. activity sketch
3. sources and resources list
4. Field Focus
5. Events Calendar
6. charts/tables/graphs
7. This newsletter is of little or no use (please comment)_____

_____

T. How would you change Interchange, if at all, to make it more useful to you?_____

U. If you have engaged in population education activities which have not been described elsewhere, please list_____

_____

(continue on last page if necessary)

V. Please add any other comments, criticism, or suggestions you may wish to include_____

_____

_____

_____

(use last page or separate sheet if necessary)

W. Do you recommend that this kind of workshop be made widely available? ___Yes ___No
Other comment_____

X. If I had to give the pop ed workshop and project a grade, it would be: __A+, __A, __A-, __B+, __B, __B-, __C+, __C, __C-, __D or F

PLEASE CHECK TO SEE THAT YOU HAVE FILLED IN EVERY PAGE!

* * *

THANK YOU VERY MUCH!

Please send completed questionnaire to: Population Education
Zero Population Growth, Inc.
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

Other comments, if any

(Use reverse side if necessary)

F

zero population growth

1346 Connecticut Avenue N.W. Washington, D.C. 20036 (202) 785-0100

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January 4, 1977

Dear Workshop Participants,

When money is granted for a project, it is important to know if that project has been well designed and if it has achieved some or all of its objectives. If you will take a few moments to respond to this questionnaire, your answers will give us guidance about whether to seek continuation of the project or to meet educators' needs in other ways. We hope to publish the results of this study, but before that time we will send a report of the results to each respondent.

The items in this questionnaire concern the effectiveness of the ZPG Population Education Project, a large part of which involved organization and cosponsorship of workshops. Workshops were held in Newark, Delaware in November 1975, in Tallahassee in January 1976, in Grove City, Ohio in February 1976, in Bergen County, New Jersey in May 1976 and in College Park, Maryland in June 1976.

While questionnaires will be coded so we can tally the responses by state, names will not be matched to responses and all information will be kept confidential. The code numbers will also enable us to send respondents a thank-you gift: a dramatic, colorful, 20 x 24" poster of the earth on a black background with the caption, "Consider the Alternative."

We know how very busy you are and appreciate greatly your taking time to respond to this questionnaire. For your convenience, an addressed, postage-paid envelope is enclosed. Again -- our thanks for your cooperation.

Sincerely,

Elaine M. Murphy

Elaine M. Murphy
Director
Population Education Project

100% Recycled Paper

Written Comments (Verbatim)

I feel the workshop was very beneficial.
Good workshop; Thank you.

I think the workshop was about the best I've ever attended and I feel the only failing was in the participants. Mostly because of the timing during the school year (many interested teachers were tied up with "end-of-the-year" exams or activities). Many valuable teacher contacts were lost. If a similar workshop were held in the future I think personal contacts to each school system (instead of the mailing telephone approach which was used) would encourage greater participation.

I would like to see the entire social studies/health staff of a single school system participate. Since our workshop was spread over the whole county, often only 1 teacher from a given district could attend. Each of them was therefore isolated and may have found it harder to keep their enthusiasm going.

Our agency is most eager to initiate a speaker system for county schools--all levels--and will do so as soon as additional volunteers are procured.

(Would like) more info or assistance in dealing with zero population growth and its meaning to minority groups and adolescents, and more or better methods of making this a real concern to unconcerned adolescents!

I use the population education information you gave me to supplement my family planning unit.

Our science department spends several weeks on world population problems. I have given them some of the materials from the workshop.

Your efforts are needed in the schools. I have been teaching family living for over 15 years so we have no problem teaching it. However, other schools are just getting into it and they have growing pains. Don't give up too soon with your efforts, they need you. Please keep me informed of any new workshops or new information.

The work of ZPG, Inc. is a great stimulus to teachers. I would like to see more such activities made available to teachers throughout the U.S.

I believe that the present focus of the workshop effort is timely and pertinent. It would be useful to expand the scope and intensity of the population education workshops. The current emphasis on interdisciplinary and differentiated instruction should assist your efforts. Good luck to you.

I am somewhat limited as to the amount of usage of the info and materials obtained at the pop ed workshop as I teach junior high science. Many of the concepts, however, have been simplified and statistics omitted to accomodate their learning potential. Resources that have been utilized have been accepted enthusiastically by the students in my Environmental Sciences class. We have been better able to relate many environmental problems to overpopulation as a result of obtaining your materials and look forward to continued communication.

Get more teachers involved!

(The workshop) needs saturation to turn LEA staffs around (more workshops) for school system's central office staffs, Board members, PTA's BEFORE classroom teachers.

Generally an excellent use of time. I have incorporated the materials into my classroom Ecology Resource Center. The information is timely and accurate as well as quite useful.

The workshop proceeded in many areas entirely too fast. Information on audio-visual materials was at times vague. Otherwise it was well done.

Hard to get into population as a resource with the rest of my curriculum to cover (science teacher).

The workshop gave me a whole new perspective on population education and provided me with ideas to make the idea less threatening for teachers. (0-06). Keep up the good work! Too rushed, although I guess that's hard to remedy.

(I recommend for future) "Two nights are better, i.e. arrive for dinner, then get acquainted and evening session. This gives a whole day followed by a partial (early afternoon) and still only missing 2 days of teaching. Thanks for all your help and encouragement!

One of the most frustrating aspects of my efforts in dealing with population-related problems is the feeling of working in a "vacuum." The workshop did much to alleviate this feeling considerably but also temporarily.

Keep up the good work and continue to disseminate the message It is a fine start--it should be continued and expanded.

Perhaps more time could have been spent on teaching strategies in the workshop. How can teachers devise objectives, activities including high-level questions, and evaluation activities into meaningful sequence to effectively teach a pop ed issue? This should have been dealt with. Perhaps working with individual participation the workshop for a portion of the program. Individuals could have been given assistance in preparing objectives, etc. for their classes.

The preparation for the workshop was magnificent and the implementation of the activities was very professional. I'm just sorry that more people did not take advantage of it (F-20).

More teachers need to be involved at the workshop (said a junior high teacher). I like the follow-up engaged in by your office.

This workshop was on environmental issues, not only population but also energy and resources (which were of more interest and applicatio. to me as a science teacher)--hard to get into population as a resource with the rest of my curriculum to cover.

To be frank, those presenting the afternoon portion of the workshop turned off many of us by a rather pedantic approach which assumed more interest and understanding than existed. Games portion was good, though not too practical for younger students.

TELEPHONE VALIDATION SURVEY
ZPG Pop Ed Evaluation Project

Date:_____ Sample: RESPONDERS NON-RESPONDERS

Respondent's Name:_____ Code Number:_____
Respondent's Phone: (Office)_____
(Home)_____
(Other)_____

Contacts

	Time of Day	Remarks (When to call back, new number, left town, etc); if unreachable, specify reason:
Attempt #1:	_____	_____
Attempt #2:	_____	_____
Attempt #3:	_____	_____

Hello, is this (Name)? This is Andy Leighton calling from Washington D.C. I am a research consultant who has been asked to conduct a follow-up study of people who have participated in population education workshops conducted by Zero Population Growth, Inc. I believe you attended a pop ed workshop at_____ in _____, is that right?

I was wondering if you would mind answering a few questions about any pop ed activities you've undertaken since the workshop. Your answers would be kept in confidence. Would you have a few minutes to talk with me about this? (If not a good time, apologize for interrupting their activity and ask if there might be a more convenient time when you could call them again. Or if the person is not there but expected in, ask that they call you collec as soon as possible).

(If person states that he/she has already received/filled out an evaluation questionnaire, reply, "Yes, however, even though these questionnaires have been sent out, we are still interested in an independent evaluation of the project").

For persons from NON-RESPONDERS SAMPLE ONLY:

Yes No 1. Have you received an evaluation questionnaire from ZPG within the last three months? (Even if answer is no, continue with interview)

Yes No 2. Are you still employed in the same position as you were at the time of the workshop, or one with equivalent opportunity for engaging in population education activities? (If not, please specify new job or other changed role_____

(Regardless of answers, continue with interview)

_____

Now, I'd like to read you a list of possible activities that could be done as a result, at least in part, of attendance at one of these ZPG workshops or in relation to other contact with the ZPG project. These activities are relevant variously to teachers, supervisors, and other categories, but there is considerable overlap between them since one person often "wears several hats." I am interested in all activities that apply to you, regardless of your primary role.

Would you please just answer yes or no after I read each item, to indicate whether you have done the activity? Please answer "yes" only to those activities which were done at least in part as a result of your participation in the workshop. Also, we are interested in activities done after the workshop and up to Feb. 1 of this year, but not after Feb. 1. OK?

Following the workshop or project and, in part, as a result of your participation in it:

(Circle one)

Yes	No	F.1.	Have you read some or all of the materials obtained through the workshop or follow-up mailings?
Yes	No	2.	Have you used workshop materials, but only in 1 or 2 presentations? (any kind of presentation, i.e. classroom faculty meeting, community group, etc.)
Yes	No	3.	Have you invited a population speaker to your class?
Yes	No	4.	Have you served as a visiting class speaker on population?
Yes	No	5.	Have you incorporated another class or teacher into your own classroom population education activity?
Yes	No	6.	Have you taught a mini-course (trimester, semester or quarter) on population for students
Yes	No	7.	Have you showed a film or other audiovisual program on population in the classroom?

Following the workshop or project and, in part, as a result of your participation in it:

Yes	No	G.1.	Have you infused a population unit of approximately 3 hours or more in duration as a structured part of your course or courses?
Yes	No	2.	Have you engaged in population curriculum writing? If yes, for use at which of these levels?
Yes	No		a. school?
Yes	No		b. system?
Yes	No		c. state?
Yes	No		d. the nation?
Yes	No	3.	Have you directed or encouraged the teachers you supervise or advise to teach about population?
Yes	No	4.	Have you included (or do you intend to include) adequacy of the coverage of population topics in your choice of textbooks (or in the textbooks of those you supervise or advise)?
Yes	No	5.	Have you attended additional workshops or courses which included a focus on population education?

(Item G continued next page)

Yes No 6.a. Have you organized or initiated an inservice workshop, session, or course for teachers and/or supervisors?
Yes No b. (If yes) Was this course/workshop held?
_____(Number) c. (If yes) How many attended?
d. If it was not held, please explain_____

_____

_____

Yes No 7. Have you suggested the inclusion or expansion of population education to your department head or supervisor?
Yes No 8. Have you devoted part of a faculty meeting to encouragement of population education?

Following the workshop or project and, in part, as a result of your participation in it:

Yes No H.1. Have you shared ideas on population education with teachers or with the school librarian?
Yes No 2. Have you started a collection of resources which focus on or include population materials?
(If yes) whom does this collection serve? _____

_____

_____

3. Have you disseminated population teaching materials or resource lists to teachers, schools or school libraries or included population resources in other such lists?
Yes No
Yes No 4. Have you publicized population education materials through a newsletter(s)? If yes, was its circulation:
Yes No a. for an individual school?
Yes No b. for a county, region, or school system?
Yes No c. statewide?
Yes No d. nationwide?
e. other? Please specify:_____
Yes No 5. Have you purchased or sent for free teaching materials? ~~for~~ use in:
Yes No a. a class?
Yes No b. a school
Yes No c. a school system
Yes No d. for your organization
Yes No e. other? Please specify:_____

Would you please tell me the title, number ordered, and cost of any material you have purchased or sent for:

Title	Number Ordered	Cost

(use reverse side if necessary)

Following the workshop or project and, in part, as a result of your participation in it:

Yes No T.1. Have you purchased, rented or borrowed audiovisual materials?

If so, would you give me their titles, sources, and cost?

Title	Source	Cost

(continue on reverse side if necessary)

Yes No 2. Have you helped to include population education in state or regional environmental education plans or frameworks? Would you please explain briefly? _____

Yes No 3. Have you applied for funds for population education? If so, from whom did you seek these funds: _____ Could you give me some idea of the amount of funding obtained? _____

Yes No 4. Do you belong to an environmental or population organization? If yes, ask: Have you offered this organization to educators
Yes No as a resource? If so, please explain _____

Yes No 5. Have you engaged in community education about population? If so, please specify organization worked with and activity:

(continue on reverse side if necessary)

U. If you have engaged in any other pop ed activities which you have not mentioned previously, would you please tell me what they might be?

(use reverse side if necessary)

V. Do you have any other comments, criticism, or suggestions which you would like to add?

(use reverse side, if necessary)

Mr. or Ms. (Name) , that seems to take care of the information that I had hoped to get in my visit with you. I certainly appreciate your taking the time to talk with me. Thank you.

INTERVIEWER INSTRUCTIONS

1. You will be given 50 interview forms: 20 with names and phone numbers of Responders, and 30 with names and phone-numbers of Non-Responders.

   "Responders" Sample

   The 20 names given you for this sample include 10 randomly-sampled names (2 from each state) plus 10 alternates (2 from each state). Make a reasonable attempt to locate the "primary" names before using the alternatives. By a "reasonable attempt" we mean 3 tries.

   IT IS IMPORTANT FOR THIS SAMPLE THAT WE GET 10 FULLY COMPLETED INTERVIEW FORMS. IF YOU RUN OUT OF NAMES BEFORE GETTING 10, PLEASE CALL US AND WE WILL SELECT SOME MORE.

   "Non-Responders" Sample

   The 30 names given you for this sample consist of 20 randomly-sampled names (4 from each state) plus 10 alternates (2 from each state). Again, make a reasonable attempt to locate the "primary" names before using the alternatives.

   IT IS IMPORTANT FOR THIS SAMPLE THAT WE GET 20 PARTIALLY OR FULLY COMPLETED INTERVIEW FORMS. If respondent has left the state and/or his/her whereabouts are unknown, please record that fact and consider this a "partially completed" interview. (This presupposes that someone has answered the phone at the number you call and gives you this information; in the case of no answer or "line disconnected" make 2 more tries--return calls in the former case, inquiries to directory information in the latter. If these attempts are fruitless, then try the alternates).

2. Please do not deviate from the script on the questionnaire in substantive ways. If the respondent asks you for clarification or judgments which would affect his/her response, answer, "I'm sorry, I don't have any information on this item other than what I have here in front of me and have just read to you. If you would just tell me your best guess as to the appropriate response, that would be good enough."

3. If the respondent asks you who has hired you, reply, "I am a free-lance independent consultant. Funds for the independent evaluation of this project come from the Office of Environmental Education." If pressed, acknowledge that ZPG is paying, but that this is a totally independent survey.

4. If the respondent wishes to converse about unrelated topics, reply "Would you mind if we came back to that later? I do have this form that I have to fill out, and I would like to get through it if it would be okay with you." After form is completed, terminate as soon as possible without being rude (e.g. "I mustn't keep you any longer--I want to wish you the best in all your endeavors and thank you very much for your cooperation."

5. If they ask you about Helen or Elaine, be polite but give no information; perhaps say you don't know.

6. Try not to guide, shape or otherwise influence respondent's comments by interjecting your own opinions during the interview.

7. If the respondent refuses to be interviewed, thank him/her and terminate the conversation. Then pick a substitute from the list of alternate respondents. After completing that interview, return to the original list of respondents and continue contacting and interviewing. (Also, follow this procedure for all other cases in which an alternate is used.)

TELEPHONE VALIDATION SURVEY
ZPG Pop Ed Evaluation Project

by Andrew J. Leighton

Between 19 - 24 April 1977, a telephone survey was conducted of individuals who attended ZPG population education workshops in five states (Delaware, Florida, Maryland, New Jersey and Ohio) between November 1975 and June 1976. This follow-up survey was designed first, in an attempt to eliminate the social desirability factor from responses (one earlier questionnaire was administered by ZPG staff), and second, to judge the relative activism of "non-responders" - those who did not respond to a ZPG mail questionnaire.

The total population of five workshops was 260; questionnaires were mailed to 186 (in February 1977); 77 responded. The telephone survey was designed to reach 10 of the 77 "responders" (13%) and 20 of the 109 "non-responders" (18%). The results are shown in the chart following the text. Eight of ten primary responders were reached. Alternates were contacted in two responder and five non-responder cases to complete the sample.

Telephone Procedures. Office numbers were provided by ZPG staff; home numbers were obtained by the researcher from Directory Assistance for all primary sample members. Almost all contacts required more than one call. Reaching individuals, especially teachers, at work was extremely difficult. Most contacts were made at respondents' homes after normal business hours (which reduced phone expense by about one-third). In addition, when individuals called collect, the researcher economized by returning the call with direct-dialing.

The Sample. Individuals were chosen by ZPG staff by a random selection of workshop attendees. However, some workshop guest speakers and other population "observers" filled out questionnaires and came up in the random telephone sample. (One of the responders - Read from Delaware - 10% of that sample; two of the non-responders - Barnett and Lott from Florida - 10% of that sample.) Persons involved in the planning or presentation of the workshop, professionals in the population field (or those with heavy prior interest and experience in population) may be given questionnaires for informational purposes, but shouldn't be analyzed in the same class as regular teachers and educational administrators.

Of the Ohio sample (four primary and four alternate), three did not attend the Ohio workshop.

The sample was composed not only of teachers, but of department heads, principals, and various other community educators and administrators. (This diversity hampered the construction of a clear, efficient questionnaire.)

The Questionnaire. The ZPG staff did an excellent job anticipating and dealing with potential problems concerning the construction and administration of the questionnaire. The cumbersome nature of parts of the instrument was due to its predecessor--and following the dictates of survey research phrasing had to remain identical in both instances. Criticisms of the present instrument (a copy of which follows the text) are unfair because they actually relate to the earlier version.

Some problems, however, that arose during the phone survey involved the following questions:

(1) F.2. Confusing, negative.
(2) G.5. May the workshop focus on "population" versus "population education?" (any difference in terms?)
(3) G.6. May the workshop have limited population content, or must it be totally devoted to population education?
(4) H.2. Many attendees started or strengthened collections of population resources.
(5) H.5. Unclear. Should read, "Have you requested teaching materials?"
(6) V. This is adequate. A response could be forced by asking, "What was the single best and worst thing about the workshop? Any additional comments?"

The researcher did not speculate or attempt to interpret questions which the respondents did not fully understand, but merely repeated the question and sometimes asked, "What do you think it means?" To repeat, the ZPG staff recognized many of these weaknesses but were constrained by the construction of the previous instrument; these points are noted to strengthen future questionnaires.

Most of the questions could be answered "yes" or "no," and because of the heterogeneous nature of the sample, this construction will result in a considerable amount of interpretive work for the ZPG staff. That is, many "no" responses were actually "not applicable" to that particular case.

For example, school principals were asked, "Have you invited a population speaker to your class?" High school teachers were asked, "Have you directed or encouraged the teachers you supervise or advise to teach about population?" In both cases, "no" responses could have (and, in fact, did) come from individuals positively influenced by the workshop.

J

The solution to this problem is a separate questionnaire for each occupational group. Or, more realistically, to simply modify future questionnaires so that respondents identify themselves by occupation: "teacher," "department head/principal/administrator," "other." Separate blocks of questions could be asked of each group, with a common set of questions for all occupations.

General Findings. On the whole, reactions to the workshop were strongly positive. Minor criticisms involved more the nature of the subject than the organization of specific events. For example, some wanted more time on each demographic exercise; others wanted a faster pace with less emphasis on demography. Workshop speakers, whenever mentioned were always described in a positive manner - as being well-prepared, energetic and highly qualified.

Not only were individuals enthused about their attendance and participation in the workshop, but in most cases their enthusiasm carried over into their own educational activities - from starting a population resource library to holding a faculty workshop of their own. Sentiment ranged from one administrator who couldn't remember attending the workshop to an assistant superintendent who applied for a grant for community population education and serves "third world snacks instead of junk food as at the [illegible]G workshop" at board of education curriculum meetings.

The rationale behind this follow-up telephone survey is strong: (1) does social desirability play a role in response to questions posed by organizers of a workshop rather than those asked by an impersonal researcher over the phone?; (2) do "non-responders" actually do less and have less interest than "responders"?

There is undoubtedly some degree of social pressure for respondents to complete questionnaires with answers they presume workshop sponsors "will want to hear." However, when reporting to a stranger over the phone in this study, attendees were strongly enthusiastic about the initial experience as well as activities within the time limit of the study (1 February 1977) which were (partially or completely) a result of their workshop attendance.

Of twenty non-responders contacted, fifteen (75%) had strong, positive recollections of workshop attendance and indicated some kind of follow-up activity. (However, two of these fifteen were actually speakers at the workshops.) Three non-responders (15%) remembered attending but reported little or no follow-up activity; two (10%) did not remember attending.

J

There are certain inherent problems in a study of this type. In many cases it was difficult for respondents to distinguish between their own prior interest in population and the specific effects of the workshop per se. In future questionnaires provision should be made for those individuals who request copies of any publications resulting from the study. Several weaknesses in the earlier instrument, by proper research procedure, had to be repeated in this instrument.

Two factors will considerably understate the positive influence of the workshops. The time constraint meant that any activity conducted as a result of the workshop but after 1 February 1977 was ignored (one respondent planned and event for 2 February). The occupational variability of the sample meant that some principals, for example, answered the question "Have you purchased, rented or borrowed audiovisual materials?" by saying, "No, but some of my teachers have!"

The telephone survey showed that there is a considerable amount of activity occurring in both the responder and non-responder samples. The final open-ended "comment" question showed respondents thought the workshops were interesting, productive, and worthwhile (and their activities since the workshops bear this out). Attendees were grateful for the information and teaching materials they received and indicated an interest in future workshops and/or information distribution. Elaine Murphy and Marge Dahlin did an excellent job putting together telephone research procedures, and, apparently, in all the workshops as well.

Andrew J. Leighton
29 April 1977

TELEPHONE VALIDATION SURVEY
ZPG Pop Ed Evaluation Project
Record of Attempt to Contact Respondents

RESPONDERS (10)

	Primary		Alternate
Delaware	1	1[1]	1
Florida	1	1[2]	1
Maryland	1	1	
New Jersey	1	1	
Ohio	1	1	

NON-RESPONDERS (20)

			Primary		Alternate			
Delaware	1	1	1[3]	1[1]	1			
Florida	1	1	1	1[2]	1			
Maryland	1	1	1	1				
New Jersey	1	1	1	1				
Ohio	1	1[4]	1[4]	1[1]	1[4]	1	1	1

[1]not available; out of town.

[2]new address unknown.

[3]refused total questionnaire; gave short statement.

[4]did not attend workshop.

Montgomery County Public Schools

850 North Washington Street • Rockville, Maryland • 20850
Telephone (301) 279-3421

June 21, 1977

Mrs. Elaine M. Murphy
Director, Population Education
Zero Population Growth
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

Dear Mrs. Murphy:

I want to thank you, Helen Lambert, and Marjorie Dahlin for conducting the workshop on population studies on May 7, 1977. We had twenty-nine participants, including secondary science teachers, science coordinators, and guests.

The best evidence of effectiveness of a workshop is the diffusion of the learning. It was most gratifying to me to observe in a junior high school the influence of the workshop training. I was visiting a school and students were reviewing the previous day's activity which was one of those you had used with teachers. In this case, a workshop participant had returned to the school and shared the experience with three other Grade 9 science teachers. They were instructing lessons for the unit of our program titled "Environmental Issues." We referenced this unit during your workshop. The four teachers conducted the activity for a total of about 300 students. It was the world population/area/food demonstration and students were very excited about it.

I feel we had a successful workshop because it contributed directly to our curriculum. The population information you shared was timely and relevant. The material you prepared specifically for our area, such as the population quiz on Maryland and Montgomery County, and graphs and data tables of area population growth were most useful. The junior high school students I observed were constructing additional graphs using this data and discussing the possible effects of the numbers on the environment. This is further testimony to the effectiveness of the workshop.

I appreciate your additional information on references and instructional resources. These will be useful for updating our instructional guide on environmental issues.

Thank you for your cooperation and support for the workshop. The teachers appreciate this kind of activity-based in-service experience and I promote it because it contributes directly to classroom instruction. I wish you continued success in obtaining financial support for population education activities. I do not know of any other organization that can do this kind of training as effectively as you and your colleagues.

Sincerely yours

John R. Pancella

John R. Pancella
Coordinator, Secondary Science

K

STATE OF IOWA • DEPARTMENT OF PUBLIC INSTRUCTION
GRIMES STATE OFFICE BUILDING • DES MOINES, IOWA 50319

ROBERT D. BENTON, Ed.D., STATE SUPERINTENDENT

Iowa
a place to grow

January 27, 1977

Ms. Elaine Murphy, Director
Population Education
1346 Connecticut Ave. NW
Washington, D.C. 20036

Dear Ms. Murphy:

Enclosed you will find a tentative program for the Population Education Workshop planned for March 18, 1977. I feel the objective stated will enable Iowa to take a necessary first stop to effectively incorporate the program materials your organization has generated into sound educational programming for student groups and state organizations in Iowa.

The program attached is to serve as a springboard for a broader continuation of workshops next fall. The participants for the first workshop will be drawn from a seven county area. We will also be surveying the other 92 counties in Iowa to establish locations for additional program by geographical areas within the state next fall. We will survey high school science, social studies and home economics departments to develop an initial participant list. In addition, individuals from many organizations such as the League of Women's Voters, Planned Parenthood, American Association of University Women, Women's Clubs, etc. will be invited to participate.

After making this assessment, it is my appraisal that four workshops should be conducted next fall. These would probably be completed in one week to maximize your organization's personnel, financial involvement and resources.

Our definition for environmental education is as follows: "Environmental Education means the educational process dealing with peoples relationships with each other and with their natural and altered surroundings, and includes the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology and planning to the total human environment. Environmental education is to foster in students and adults a concern for the environment and its associated problems" Needless to say, population dynamics is interrelated to all the topics discussed and I perceive your group assisting with the monumental task of conveying that perception to the citizens of this state.

You have an important role to perform and we feel the continuation of your efforts is vital. Thank you for your help and guidance.

Yours truly,

Duane Toomsen (mec)

Duane Toomsen
Consultant, Environmental Education
Curriculum Division

DT:mec
Enclosure

SYRACUSE UNIVERSITY

DEPARTMENT OF SCIENCE TEACHING | 101 HEROY GEOLOGY HALL | SYRACUSE, NEW YORK 13210

TELEPHONE 315 | 423-2595

January 25, 1977

Ms. Elaine M. Murphy
Director, Population Education
ZERO POPULATION GROWTH, Inc.
1346 Connecticut Avenue, N.W.
Washington, D. C. 20036

Dear Ms. Murphy:

I am pleased to learn that your organization is submitting a proposal for the continuation of the population education project beyond June of 1977, and want to support your efforts in any way possible. As you know, we in New York State are looking forward to the population education teacher workshop planned for this coming Spring and it is our sincere hope that our collaboration in this effort will lead to increasing interest in population education in our schools.

In my opinion, it is only through projects such as the one which ZPG has been conducting that we will be able to succeed in bringing the vital messages of population education into school programs. Your workshops and educational materials provide the stimulus needed to get local educators involved in this critical enterprise. From what I know of the programs which you have already conducted, this has indeed been the case. However, much more is needed, and it is only through programs such as the one you are currently proposing that you will be able effectively to reach the enormous numbers of schools as yet uninvolved in population education. I applaud your efforts of the past and the present, and can only hope that you will receive the funds needed in order to continue moving ahead.

I wish you well in your efforts to obtain the fiscal support so critical in your work, and stand ready to support your work in any way possible.

Sincerely yours,

William C. Ritz

William C. Ritz
Associate Professor of
Science & Environmental
Education

SCHOOL OF EDUCATION | COLLEGE OF ARTS AND SCIENCES

K

RALPH D. TURLINGTON
COMMISSIONER

STATE OF FLORIDA
DEPARTMENT OF EDUCATION
TALLAHASSEE 32304

January 25, 1977

Ms. Elaine M. Murphy
Director
Population Education
Zero Population Growth
1346 Connecticut Avenue, N. W.
Washington, D. C. 20036

Dear Elaine:

I was pleased to learn that Zero Population Growth wishes to continue the population education project for another year.

As you know, my office made a substantial commitment of services as a continuation of the excellent workshop you coordinated in Florida. We did this because we were convinced that your project's efforts were effective with teachers.

I am convinced that the population education project should be continued. We need the assistance which your office can provide at the state level. Your project can facilitate the continued exchange of information on population education between the various states, a vital element to continued improvement.

Florida will cooperate in your population education project. We wish you well in your efforts.

Sincerely,

Dick

C. Richard Tillis
Director
Office of Environmental Education

/bd

UNIVERSITY OF DELAWARE
NEWARK, DELAWARE
19711

DEPARTMENT OF CURRICULUM AND INSTRUCTION
COLLEGE OF EDUCATION
WILLARD HALL EDUCATION BUILDING
PHONE: 302-738-2331

January 24, 1977

Elaine Murphy
Director, Population Education
Zero Population Growth
1346 Connecticut Avenue, N. W.
Washington, D. C. 20036

Dear Elaine:

Your concern for the continuation of your population-education project will be shared by many. Every effort should be made to keep your project operational for the next several years. However, the support funds should be substantially increased in order to meet each of the goals set for program.

Speaking primarily with reference to your project's activities in Delaware, several comments may be made. Each phase was characterized by careful planning. Each conference, workshop and follow-through session provided ample evidence of high quality, systematic planning. It was unfortunate that the budget limitations governing the project did not permit more extensive programs to be developed.

The national effort under your direction serves to complement local efforts. Our Delaware teachers and administrators responded most favorably to the "external" source. It provided an added motivation and revitalization in population-education that Dr. Stegner and I were unable to make. Again, there is a need for more not less of your endeavor. The opportunity to provide for an interchange in this complex and often misunderstood area grows through national teacher-education efforts.

Certainly your efforts in population-education should be highly regarded by the Office of Education. A top level priority rating would seem to be in order, especially as you attend to the multi-disciplinary dimensions of the issues and provide for the direct involvement of participants in decision-making processes.

I sincerely hope we'll continue to have opportunities to work together.

Sincerely,

Val Arnsdorf
Chairman

VA:gj

K

JAMES A. KENSENBAUGH
STATE SUPERINTENDENT

David W. Hornbeck
State Superintendent

MARYLAND STATE DEPARTMENT OF EDUCATION
P.O. BOX 8717, BWI AIRPORT
BALTIMORE, MARYLAND 21240

January 20, 1977

Ms. Elaine M. Murphy, Director
Population Education
Zero Population Growth
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

Dear Elaine:

I am happy to learn that you are seeking funds to continue your current programs in population education. I sincerely hope that the funding is available to you and that you are able to continue the valuable services you are providing the schools of Maryland and other states.

Funding for Environmental Education has been so limited in the states that we need the assistance and cooperation from competent people and organizations such as you and Zero Population Growth if we are to implement a comprehensive program of Environmental Education in Maryland.

We appreciate all that you have and are doing, and look forward to continuing our efforts with you in the area of population education teacher-training. I support your efforts and hope that your funding continues.

Sincerely,

James W. Latham, Jr.

James W. Latham, Jr.
Consultant in Science

JWL/bsm

STATE OF MICHIGAN

DEPARTMENT OF EDUCATION

Lansing, Michigan 48909

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Superintendent of
Public Instruction

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Ex-Officio

December 2, 1976

Elaine M. Murphy
Director
Population Education
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

Dear Elaine:

I wish to thank you and your colleagues for participating in the Michigan Environmental Education Association Conference in Battle Creek. Due to the immediate need for population education, I feel that your program had a major impact upon Michigan educators.

I was very impressed with your presentation and the materials that you presented. You kept the audience concerned, involved and interested. Also I really liked the professional way that the program was presented. In talking with teachers and other educators afterward, I found that the program could be used "tomorrow" in the classroom.

I wish to thank you also for reading and commenting on the Michigan Minimal Performance Objectives in Science. Your suggestions were very useful and certainly energy should be a part of the program.

Once again, Elaine, I wish to thank you for the most excellent program.

Sincerely,

Jack W. Kammeraad

Jack W. Kammeraad
Science and Environmental
Education Specialist

JK/cm

TOP-RANKED NEEDS OF EDUCATORS AT ZPG, INC. POPULATION EDUCATION WORKSHOPS

ITEM	Rank	N
Lesson plans, background information and classroom activities	1	71
Teacher-training opportunities	2	59
Films and other audiovisual materials	3	52
Text, charts and resource materials	4	33
A plan for implementing population education	5	31
Money to develop own programs	6	26
Approval or encouragement from school system	7	24
A pre- and post-test for students	8	6

Source: Questionnaire filled out by educators at ZPG, Inc. Teacher-training Workshops, 1975-1976. N = 215

POPULATION EDUCATION QUESTIONNAIRE

1. Name _____

2. Mailing Address _____

_____ ZIP _____

3. Daytime Telephone (Area Code) _____

4. Professional Position _____

_____

5. Your involvement with or interest in population education: Please check:

   a. _____Teacher: _____college, _____high school, _____jr. high, _____elementary

   b. _____Curriculum Supervisor: _____social studies, _____science, _____environment, _____other (specify) _____

   c. _____Other Educational Administrator (Please specify.) _____

   d. _____Curriculum Developer (including audio-visual aids)

   e. _____Volunteer

   f. _____Other (Please specify.) _____

6. Please rank in order of importance what you need to make population education possible or to improve it in your schools. Eg.: 1 films; 3 training, etc. Ties are acceptable.

   a. _____Teacher-training opportunities

   b. _____Lesson plans, background information, and classroom activities

   c. _____Films and other audio-visual materials

   d. _____Pre- and Posttest quiz to determine students' attitudes and knowledge

e. _____Texts, charts and resource material for students

f. _____A plan for implementing population into already existing courses

g. _____Approval or encouragement of the school system

h. _____Money to develop our own school(s) program in population

i. _____Other (Please specify.) _____

_____

7. Would you like to receive the population education newsletter, Interchange, from the Population Reference Bureau? (There is no charge to workshop participants.)

a. _____Yes

b. _____No

c. _____I already receive it.

8. What contribution could you make to further population education in the schools?

_____

_____

_____

_____

_____

_____

Population Education: Needs and Opportunities

for the American Public School System

1. An increase in the number of implementation projects. The ZPG Population Education Project is active in "systematizing" population education in five states. Many other states expressed interest and a willingness to participate in the project. The timing is right!

2. Implementation of population education into private and parochial school systems. The National Catholic Education Association has made a good start in this direction for its schools.

3. A focus on adult and continuing education as well as special enrichment courses for the gifted (what better way to challenge our brightest students?); individualized instruction programs are another area.

4. Pre-service courses on population education in all colleges of education. Teachers have repeatedly identified the need for training as an obstacle in their desires to include population studies in the classroom. This is a critical need!

5. Textbooks. Textbooks are a major blueprint for classroom activities. There is need to assess current textbooks in appropriate subjects to see that the role of population is adequately dealt with in terms of quality and scope.

6. The adequateness of school and public libraries. Assignment of a term paper on population is an effective method of teaching population concepts (students learn best by doing); yet, there are too few books and references available to students.

7. Continuing the development and improvement of population materials for classroom use, based on feedback from teachers in the field. Sources and resources lists are heavily used by teachers; new editions must be published periodically.

8. Materials distribution. There are some excellent materials already available (from the Population Reference Bureau, for example). However, there are population education

materials developed by teachers and professors in previously funded projects that are not reaching the classroom. The reason for this is simple: there have been funds for development of materials, but hardly any money for printing and distributing them. This is an ironic and cost ineffective way of utilizing funding. Many school systems would use population curricula immediately if provided at low or no cost.

9. Lobbying for a federal Population Education Act. Generous private foundations have made most of the work in population education possible. It is time to put pressure on the Congress to fund nationwide programs and research in population education.

10. Research concerning the outcomes of population education, best teaching methods, best implementation methods, and surveys of population knowledge and attitudes is needed, among other topics. Universities and government research agencies must become involved.

11. Continued endorsement of population education from political and educational leaders. The inclusion of population education sessions at professional meetings also utilizes an effective communication network.

Elaine M. Murphy
Population Education Director
Zero Population Growth, Inc.

Project Staff (see curricula vitae, attached)

1975 - 1976

Project Director: Elaine M. Murphy

Assistant Director: Helen T. Lambert

1976 - 1977

Project Director: Elaine M. Murphy

Associate Director: Helen T. Lambert

1977 - 1978

Project Director: Elaine M. Murphy

Assistant Director: Marjorie B. Dahlin

Curriculum Vitae

Elaine M. Murphy
4706 Broad Brook Drive
Bethesda, Maryland 20014
(301) 530-2443

born 2/22/40
married
two children

Education

B.A.	Marquette U., 1962; English and French majors; education minor; magna cum laude
M.A.	Johns Hopkins U., 1965, English (The Writing Seminars)
(PhD.)	U. of Maryland, Human Development Department, College of Education; course work completed, dissertation in progress. Dissertation topic: "The Implementation of Population Education: Present Status and Needs of Educators"

Honor Societies

Sigma Tau Delta (English)

Gamma Pi Epsilon (National Catholic Honorary)

Kappa Delta Pi (Education)

Employment Experience

1975 --	Population Education Project Director, Zero Population Growth
1973-74	Research assistant in study of open and traditional schools, Psychological Services Division, Montgomery County Public Schools, Maryland.
1962-66	Teacher of high school English in public and private schools in Milwaukee, Minneapolis, and Baltimore.

Other Relevant Experience

1974-75	Population Institute Intern. Project: to develop and to teach a population education course for undergraduates and for high school teachers. Published by The Population Institute September 1975 under title: "Population and Human Development."
1974-75	Speaker on population topics to university, high school, junior high schools, and teacher groups. (List available)
1973-74	A co-editor of The Open Line, educational newsletter.
1972-74	Jr. Great Books Leader in elementary schools.
1968-70	Tutor with Urban Service Corps in inner-city schools.

Memberships

Society of Population Educators (Officer, 1975--)
World Population Society
Population Reference Bureau
Allen Guttmacher Foundation
American Association for the Advancement of Science (AAAS)
Section on Population (34) of the American Psychological Association
American Public Health Association, Section on Population
Population Association of America
Zero Population Growth, Inc.

Publications

Population and Human Development: A Course Curriculum Including Lesson Plans, Activities and Bibliography. The Population Institute, Washington, D.C. 1975, revised 1977.

"Population Resources for Teacher," Zero Population Growth National Reporter, October 1975.

"Population Education Project," National Reporter, November 1975.

Publications (continued)

"Population Education: Audiovisual Materials," National Reporter, December 1975.

"The Games Kids Play," National Reporter, January - February 1976.

"Classroom Games," National Reporter, March 1976.

"A Bibliography for Teachers," National Reporter, April 1976.

"Publications for Teachers: The Population Reference Bureau," National Reporter, May 1976.

"ZPG Pop Ed Grant Renewed After Successful Year," National Reporter, July - August 1976.

"Office of Environmental Education Grants," National Reporter, September 1976.

"Bringing the Real World into the Classroom: The Call for Population Education," Environmental Education Report, October 1976.

"Local Projects," National Reporter, October 1976.

"Colorado Workshops," National Reporter, November 1976.

"Psychological Aspects of Population," Intercom, Vol. 4, No. 11, November, 1976.

"Desert Island Reading," National Reporter, January - February 1977.

A Biosocial View of Population: Evolution, Animal Behavior and Early Human Groups, The Population Institute, Washington, D.C., 1977.

"Population Education in the U.S." (contributing author) by Carl A. Huether and Sosan O. Gustavus, PRB Report, Vol. 3, No. 2, March 1977.

Population Education Resources Kit (co-author: Helen Lambert), ZPG, April 1977.

"Tips For Teachers: Population Education and the Federal Role," National Reporter, April 1977.

Publications (continued)

Recipe for a Small Workshop: A Population Education Leader's Guide, ZPG, May 1977.

"Sex, Fertility, and Psychiatry," Proceedings of the Annual Meeting of the American Psychiatric Association, May 1977.

"Lessons From Human Beans," co-authored with Marge Dahlin) National Reporter, August 1977.

An Evaluation of the Zero Population Growth, Inc. Population Education Project, 1975-1976 (co-author: Marjorie Dahlin), Final report to the U.S. Office of Environmental Education, ZPG, September 1977.

"Population Can Be Fun and Games," Environmental Education Report, October 1977.

"Teaching About Population," The American Biology Teacher, November 1977.

Presentations

1975, Oct.	"Fertility Behavior in 'Primitive Groups'" Florida State University, graduate course in population education.
1975, Oct.	"The Why and How of Population Education" (with Lester McCrea of the Urban Life/Population Education Institute) Family Life teachers in-service class, Frederick, Maryland.
1975, Nov.	"Population Trends and Their Implications," University of Maryland graduate course in Human Development.
1975, Nov.	"The Implementation of Population Education," World Population Society, Washington, D.C.
1975, Dec.	"Needs and Opportunities in Population Education," University of Chicago Invitational Seminar on Population Education.
1975, Dec.	"The History and Future of Human Population Growth," National Institute of Health course on Human Reproductive Physiology.
1976, Feb.	"Why Study Population?" Northwood High School, Wheaton, Maryland.
1976, Feb.	"Population and Youth," CLOSE UP Program, Washington, D.C.
1976, March	"Money for Population Education: A Little Can Go A Long Way," Federal Interagency Subcommittee on Population Education (HEW).

Presentations (continued)

1976, April	"The ZPG Population Education Project," Testimony before the House of Representatives Committee on Population and Census, Patricia Schroeder, Chairperson. Transcript published in Congressional Record.
1976, May	Seminar on Population Education. The Mid-Atlantic Region of Planned Parenthood Annual Meeting, Pittsburgh.
1976, Aug.	"Pop Ed: Strategies for Implementation in the U.S.," The University of Chicago, Graduate Seminar in Population Education.
1976, Sept.	"Population Education in American Schools: A Workshop Approach" at Carolina Population Center, University of North Carolina.
1976, Nov.	"Implementing Population Education Through Grassroots Organizations," panel, National Council for the Social Studies.
1976, Dec.	"Population Education: A U.S. Model," World Population Society, Washington, D.C.
1977, April	"Classroom Activities for Population Education," the Society of Population Educators, St. Louis, Missouri.
1977, May	"Sex, Fertility, and Psychiatry," co-moderator of panel, American Psychiatric Association, Toronto.
1977, May	"Population Education in Maryland," Montgomery County Planned Parenthood annual meeting.
1977, June	"What's Happening in American Population Education," Columbia Teachers College, N.Y.
1977, July	"Population Education in the U.S. and Overseas: What We Have in Common," University of Chicago international seminar on population education.
1977, Sept.	"Population and Morality"(with Marge Dahlin), Planned Parenthood Conference for Clergy, Berks County, PA.
1977, Oct.	"Sex and the Single Planet," University of Delaware Conference on Human Sexuality.

Consulting and Related Experience

-- reviewer of Population Reference Bureau population education survey instrument for national survey of teachers; University of Kenya Student Survey of Population Knowledge, and Proceedings of the Rhode Island Education Association Population Education Project, 1975.

Consulting and Related Experience (continued)

-- contributor to population section of Science for Society Bibliography, American Association for the Advancement of Science, 1976.

-- reader for FY 1976 government proposals for the U.S. Office of Environmental Education, HEW, December 1975.

-- sponsor for Population Institute intern for Maryland population education project, 1975-1976.

-- consultant to the Federal Interagency Committee on Education, Subcommittee on Population Education, HEW, 1976.

-- consultant to Maryland State Department of Education, 1977.

-- consultant to U.S. Office of Environmental Education, Task Force, September 1977.

Curriculum Vitae

Marjorie B. Dahlin
2270 Pimmit Run Lane, #102
Falls Church, Virginia 22043
(703) 893-8051

Work Experience:

9/76 -- Present	Assistant director, population education program, Zero Population Growth, Inc., Washington, D.C.
1975 -- 1976	Consultant, research and writing, Homemaker Testing Corporation and Health Facilities Resources, Inc.
1972 -- 1975	Instructor, human development, Galludet College
1970 -- 1972	Research assistant, Department of Family Environment, Iowa State University

Areas of Competence

Research	Proposal-writing; searching of literature; instrument design; interviewing; data coding and tabulation; preparation of graphs, tables, and reports. Have research experience with teachers and school administrators, family planning personnel, consumer groups, low-income families, the elderly, and the handicapped in the areas of population education activities, housing preferences, product acceptance, attitudes relating to self-concept, feminism, and orientation to life, and demographic characteristics.
Program Development	Development of educational materials in population education, marriage and family relationships, housing, child development, adolescent development, and home management. Review and preparation of instructional resources for use in teacher training and follow-up. In consultation with department director, organization and presentation of population education workshops for teachers and administrators; fundraising; budget preparation and supervision of clerical help.

Areas of Competence (continued)

Writing and Editing	Writing of articles in ZPG's National Reporter; editing of a variety of publications including newsletters, departmental reports, funding proposals, and promotional brochures. Writing and videotaping of presentations on family ritual, sex role socialization, and death for WMPB-Baltimore (educational TV). Book review of Handtalk published in September 1974 issue of Science Books. Score of 94 on writing-editing portion of Professional and Administrative Career Exam, U.S. Civil Service Commission.

Education

Present -- U. of Maryland	Ph.D candidate in human development education
1973 -- Iowa State U.	M.S. in family environment. Thesis research: "Feminism, equalitarianism, and marital satisfaction"
1970 -- Iowa State U.	B.S. in secondary education
1965 -- 1967	Attended Luther College, National Merit Finalist, 1965

Publications

"Population Issues in Family Life Classes," National Reporter, September 1977.

"Lessons From Human Beans," (co-authored with Elaine Murphy) National Reporter, August 1977.

"Hometown Relevance for Pop Ed," National Reporter, May - June 1977.

Do Workshops Work? Participants' Activities following Work-Shops in Five States, Summary of research evaluation of ZPG population education project, 1975-1976, sponsored by Office of Environmental Education, U.S. Department of Health, Education, and Welfare.

"Family Size Decisions and the Individual: The Role of Personality," ZPG, paper on personality theory and fertility decisions.

Presentations:

----Population education workshops presented for:

N.C.S.S., regional meeting, Boston, Massachusetts; March 1977

Cedar Rapids Public Schools, Cedar Rapids, Iowa, March 1977

Montgomery County Public Schools, Rockville, Maryland; May 1977

Syracuse, N.Y. area educators; cosponsored by Syracuse University, Syracuse, NY; May 1977

Annual meeting of Zero Population Growth, Inc., Rochester, NY, June 1977

University of Maryland Graduate School, classes in environmental education (July 1977) and human development (November 1977)

Farmington, Michigan Public Schools, August 1977

Planned Parenthood of Berks County, PA; Clergyman's Breakfast, September 1977

Curriculum Vitae

Helen Taylor Lambert
1248 31st Street, N.W.
Washington, D.C. 20007
(202) 338-5292

born 8/21/47
married
no children

Education

Graduate	Peabody Institute Preparatory Department in piano, 1965
B.A.	History, Duke University, 1969
M.A.T.	History, Yale University, 1970
(no degree)	National Science Foundation, Institute in Population Studies, University of Cincinnati, Ohio. Summer, 1973

Honors

Phi Beta Kappa

Honors in history at Duke University

Magna cum laude at Duke University

American Field Service Summer Program student to Brazil, 1964. Lived with non-English speaking family.

International Honors Program, 1967-68. Selected by Duke University as its representative in a group of students from roughly ten American colleges and universities for an academic year of study in Germany, India and Japan. The students lived with local families in each country. The program was supported by scholarships.

Employment Experience

1975 August	Assistant Project Director of the Population Education Project, Zero Population Growth, Inc. The project was funded by the U.S. Office of Environmental Education, Grant #GOO-7500692.

1970--74 Secondary School teacher in Montgomery County, Maryland, public school system. Taught: Modern World History, Russian History, and History of the Far East at Charles Woodward High School in Montgomery County.

Relevant Experience

Developer of population education unit designed to be infused into Modern World History course in Montgomery County, Maryland Public Schools.

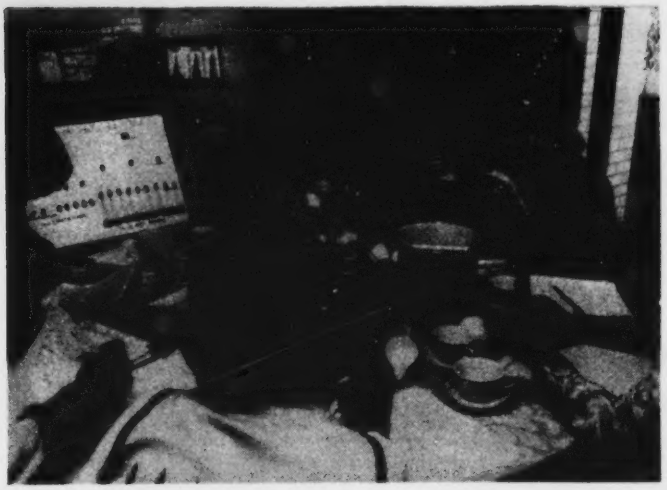
Facilitator of population education at Charles W. Woodward High School, 1973 present.

Consultant in planning for 1975 World Population Society International Population Conference, Population Education Workshop.

Consultant, demonstrator of population education to an Environmental Education Workshop, Montgomery Country, Maryland, December 1975.

Reader, Asia Society Project to assess bias in American textbooks, 1974-75.

Scenes from ZPG Pop Ed workshops



Marge Dablin, Pop Ed assistant director, explains to educators how buckets, beans and shoeboxes serve as inexpensive aids for population education.

Pop Ed Director Elaine Murphy, left, discusses the family-size concept at ZPG's Pop Ed leadership training workshop.

Teachers in a Maryland workshop demonstrate a classroom technique to show the difference "one more child" makes. At left – four generations of two-child families; at right – four generations of one-child families.